SUSTAINABLE DEVELOPMENT IN COSTA RICA: A MORAL GEOGRAPHY

By

MAURICIO HERRERA RODRÍGUEZ

B.Sc. Kansas State University, 2002
M.Sc. Kansas State University, 2004

Submitted to the graduate degree program in Geography and the
Graduate Faculty of the University of Kansas
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy

_____
Dr. J. Christopher Brown, Chair

_____
Dr. Gregory T. Cushman

Committee Members:

_____
Dr. Shannon O´Lear

_____
Dr. Brent E. Metz

_____
Dr. Garth A. Myers

Date Defended: _____

The Dissertation Committee for Mauricio Herrera Rodríguez certifies
that this is the approved version of the following dissertation:

SUSTAINABLE DEVELOPMENT IN COSTA RICA: A MORAL GEOGRAPHY

Committee: _____
Dr. J. Christopher Brown, Chair

_____
Dr. Gregory T. Cushman

_____
Dr. Shannon O´Lear

_____
Dr. Brent E. Metz

_____
Dr. Garth A. Myers

Date Defended: _____

ABSTRACT

Sustainable development has been uncritically adopted in Costa Rica and elsewhere as a desirable ideal informing development practice. Nevertheless, critical voices outside the development establishment have questioned the efficacy of the concept to guide social change and productive practices in directions that improve the quality of life of Costa Ricans' and their relationship with the natural environment. However, their critiques lack a theoretical framework that effectively explains what it would take for such transformations to take place, and what they mean in terms of the places we inhabit, the lives we live and the values that guide our social relationships and our interactions with the natural realm. This dissertation proposes a geographic conceptualization of development that offers analytical tools to map the moral character of on-going transformations of the Costa Rican place, and to elaborate concrete development alternatives that render the conservation of nature and development practice as mutually reinforcing articulations of a national place-making project.

ACKNOWLEDGEMENTS

Committee members Shannon O'Lear, Brent Metz, Greg Cushman and Garth Myers have agreed to read my manuscript even though it deals with a topic and a country not directly related to their daily work. This is one more reason to appreciate their feedback and dedication. I also want to thank Chris Brown for wanting to work with me towards the PhD., for the patience, positive attitude and effort required to sit through our meetings and to read and revise my multiple drafts, essays, 'reactions' and emails.

My friends in Kansas, both in Manhattan and Lawrence, made it easier to live and study abroad and I thank them for that. Some of them have become a second family but others I will likely never see again and hence I use these lines to remember our times together.

Y finalmente, gracias a mi familia en Costa Rica, por el apoyo brindado incondicionalmente de principio a fin; este trabajo esta inspirado en nuestras experiencias compartidas durante tantos paseos en nuestro bello país.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LISTOF ACRONYMS

ACEPESA: Central American Association for Economy, Health and the Environment
ACTUAR: The Costa Rican Community-based Rural Tourism Association
APRODUMA: Butterfly Producers' Association
APROSAMA: Producer's Association from San Marcos
ASCONA: Costa Rican Association for the Conservation of Nature
ASPs: Protected Areas
ASVO: National Parks Volunteers' Association
AyA: Aqueducts and Sewers (Public Institution ~ Water Works Utility Company)
AZAGROTUR: Agroecotouristic Associations of Zapotal, San Ramón.
CAT: Tributary Exemption Bonds
CAF: Forestry Bonds
CAFTA: Central American Free Trade Agreement
CATIE: Agronomical Center for Research and Education
CCT: Tropical Science Center
CEF: Children's Eternal Forest
CINPE: International Center for Political Economy
CODESA: Costa Rican Development Corporation
COMEX: Ministry of Foreign Trade
COOPRENA R.L.: Nacional Network of Rural Community-based Tourism
CRISOL: *Costa Rica Solidaria*
CST: Certificate of Sustainable Tourism
EARTH: Agricultural School for the Humid Tropics
ECODES: National Conservation Strategy for the Sustainable Development of Costa Rica
EOSL: Earth Observation Systems Laboratory
EPI: Environmental Performance Index
FECON: Costa Rican Federation for the Conservation of the Environment
FONAFIFO: Forestry Financing Fund
GEF: Global Environmental Facility
GDP: Gross Domestic Product
HDI: Human Development Index
IIED: International Institute for Environment and Development
ICT: Costa Rican Chamber of Commerce
IMF: International Monetary Fund
INBio: National Institute of Biodiversity
IUCN: International Union for the Conservation of Nature
JAZON: Young Farmers of the Northern Zone
LOA: Organic Law of the Environmental
LPN: National Parks Law
LPU: Urban Planning Law
LZMT: Law of the Maritime-Terrestrial Zone

MAOCO: Costa Rican Organic Agriculture Movement
MEA: Millennium Ecosystem Assessment
MAG: Ministry of Agriculture
MEP: Ministry of Education
MINAE: Ministry of Environment and Energy
MIRENEM: Ministry of Natural Resources, Energy and Mines
NAFTA: North American Free Trade Agreement
NGO: Non Governmental Organizations
ODD: Development Observatory
OTS: Organization of Tropical Studies
PAC: Citizen's Action Party
PASV: Agenda for the 21st Century
PEN: State of the Nation in Human Sustainable Development Program
PES: Payments for Environmental Services
PLN: National Liberation Party
PND: National Development Plan
PRETOMA: Marine Turtle Restoration Program
PUSC: Social-Christian Unity Party
PRIGA: Interinstitutional Program on Water Management
PRODUS: Center for Urban Sustainable Development
RCFU: Regulation for the Control of Urbanizations
SFS: School for Field Studies
SINAC: National System of Conservation Areas
TSE: Supreme Electoral Court
UCR: University of Costa Rica
UN: United Nations
UNA: National University
UNCTAD: United Nations Commission on Trade and Development
UNDP: United Nations Development Program
UNED: National Distance-Education University
UPOV 91: International Convention for the Protection of New Varieties of Plants
WCED: World Commission on Environment and Development
WCS: World Conservation Strategy

I. INTRODUCTION

Over the last two decades, Costa Rica has established a reputation as a pioneer in implementing policies in tune with the sustainable development model promoted around the globe by the United Nations (UN) and many other governmental and nongovernmental institutions. Because of its reputation, the country has been able to lure international investment and cooperation to fuel both economic growth and conservation efforts.[1] Ever since the Costa Rican government launched a campaign to formulate and raise funds to support a Conservation Strategy for the Sustainable Development of Costa Rica (ECODES) in 1986, sustainability has been the main and unquestioned goal legitimizing development policies articulated by most, if not all, national governments (Fernández-González 1994; PEN 2005; Quesada-Mateo 1989; Quesada- Mateo and Solís-Rivera 1990; UNED-INBio 1994). Therefore, in contrast to the way sustainable development projects have been articulated elsewhere in the world, mainly through projects promoted and often-times managed by foreign development agencies, it could be argued that sustainable development has been implemented in Costa Rica as a central element of a national development agenda, which has made of sustainability, vaguely defined, its ethos and main objective, at least in rhetoric.

[1] Support has come not only from conservation NGO's, but also corporate partners and foreign governments. Between 1986 and 2003 the country received at least $380 million in official aid for environmentally-related development projects alone (Hernández-Mora 2003 pp. 247-262).

Given the international political acceptance of the sustainable development paradigm, the Costa Rican experience is central in the debates over the desirability to promote sustainable development as 'the perfect model' for development efforts worldwide. In fact, following the recommendation of the UN's World Commission on Environment and Development (1987), sustainable development became the launching platform for a global quest for sustained economic growth together with a non-exhaustive utilization of the natural environment. According to Donald Worster (1993, p.143) the term found a strong appeal world wide for "its international political acceptability among the rich and poor nations alike, in its potential for broad coalition among many [otherwise] contending parties". It is in fact "the best-known and most commonly cited idea linking environment and development, [and] it is also the best documented" (Adams 2001, p.23).

Nevertheless, this project finds its motivation out of a sense of dissatisfaction with the nature and scope of the existing public – political and academic – debates concerned with the transformation of Costa Rica into a sustainably developed country. First of all, there is an important number of influential political and academic positions that take for granted the desirability of sustainable development – as defined by the World Commission on Environment and Development – as a goal, both in the specific case of Costa Rica, and in the general case of the international community. Indeed, these positions assume that the premises and aims established and reproduced by the sustainable development model are both desirable and sufficient for countries around

the world to guarantee the well-being of their populations and the ecological processes they depend on. As a consequence, progress in development has come to mean progress in achieving sustainability. Be it strictly environmental sustainability, in terms of area of forests conserved, species saved and discovered and tons of carbon fixed; or social sustainability, in terms of capability-building, participation, democratization, decentralization; or productive and financial sustainability, in terms of economic growth, yields per acre, market transactions, inflation reduction, capital accumulation, unemployment reduction and so-called 'clean' development mechanisms; or cultural sustainability, in terms of cultural heritage preservation, and acknowledgement of traditions.

Following these guidelines, advocates of sustainable development debate about what is the country's level of progress in meeting the objectives dictated by the sustainability milieu as measured by development indexes, while also pondering what the best policy mechanisms are to move up on these officially sanctioned development charts. As expected, these debates not only focus on development tools, but also on development priorities. Hence interested parties tend to emphasize the imperative of moving in the direction of one kind of sustainability rather than the other. Economists for example tend to insist that environmental sustainability needs to be preceded by sustained economic growth. Thus, these positions are trapped by a relativistic gridlock where the most influential public forces promote their own agendas following their convictions and/or interests, and as long as they claim that

they are moving the country in the direction of sustainability, they are assumed to be good and desirable.

In Costa Rica the political and business establishment has been running the country following an increasingly absolutist neoliberal ideology for the last 20 years. This doctrine relies on recycled classical political economic ideas developed in the 1960s and 70s by U.S. and European economists such as Milton Friedman and Friedrich von Hayek. In a nutshell, their theories argue that excessive government spending encourages monetary inflation and that socialist-like, disaster-prone government-led planning should give way to classical Smithian and Ricardian free-market principles (Peet and Hartwick 1999, p.49).[2]

As the most influential political and economic interest-group, neoliberals and their supporters have successfully adapted the goals of sustainable development to coincide with their own interests and goals. Accordingly, main-stream discussions on development are increasingly dominated by the assumed desirability of neoliberal sustainable development and hence remain short of truly questioning the intrinsic character and implications of policies formulated within this milieu. Instead, these 'debates' often serve as mere means to monitor progress towards a pre-assumed preferred direction, regardless of its implications, while also helping to reproduce the

[2]These theories have been in turn reinforced and disseminated world-wide by conservative political-economic ideas glorifying laissez-faire and rugged individualism (Peet and Hartwick 1999, p.49). See sections IVd and Vc for a detailed elaboration of the historical and ideological roots of neoliberalism and how it has been implemented in Costa Rica.

ideals and values dictated by the neoliberal version of sustainability. Hence, mainstream 'development-talk' falls short of questioning the moral desirability of the models of society they reproduce as well as their associated values (Arias 2008; Castro 2006; La Nación, April 6 2006, pp.1A, 18A). As a consequence, this ideological establishment is largely incapable of formulating concrete alternatives for progress that go beyond the directions dictated by the models they uncritically follow.

This increasingly hegemonic tendency where public actors have agreed to agree with the existing sustainability milieu, begs the question - among many others: How do we know that the self-imposed goal of sustainability is desirable and, by association, that it ought to be pursued? Likewise, we are compelled to ask: How do we know that policies implied by the sustainability paradigm, such as habitat conservation, ecotourism, bioprospecting and payments for environmental services, are good and desirable? What is really progressive and beneficial about these practices and why should we bother to score good marks in the United Nations' Human Development Index, or the World Economic Forum's Environmental Performance Indicator? Or more bluntly, how do we know that 'being green' is good for us, and even more so, what shades of green are good enough?

Nevertheless, it is hard to support practices that are overtly destructive of the natural environment. Yet as elaborated in Chapter III, sustainability – be it environmental or of any other kind – is no different than efficiency in that they both should not be

taken as goals on their own right. This is so because if taken as values or goals on their own, they can be used to justify the best and the worst of projects. Hence it is not fortuitous that some of the worst crimes against humanity and the natural environment have been committed in the name of sustainability and efficiency:

- The Soviet Union's government hid from public view the Chernobyl catastrophe for sake of guaranteeing the sustainability of the Soviet project (Stone 2006)
- European and American imperial powers justified slavery and the killings of as many as 50 million Africans for sake of the sustainability and efficiency of their colonial empires (Zinn 2003, pp.27-30; see also Wolf 1999, pp.195-231)
- Boris Yeltsin and the 'new Russians' justified inflation of prices and subsequent hunger among Russians for sake of market efficiency (Edwards 1993)
- Conservation initiatives everywhere have displaced indigenous peoples, their traditions – and those of other minorities – for sake of the sustenance of idealized notions of nature as undisturbed by human actions (Chapin 2004; Jacoby 2003), while also giving way to ecological catastrophes, as in the case of Tsavo National Park in East Africa (Botkin 1990, pp.14-9)
- Management of natural resources based on sustainable-yield limits and carrying capacities has often been the keyword for species decay and even extirpation from several habitats, as blatantly revealed by the failed

management of fisheries worldwide (Botkin 1990, pp.19-23; McEvoy 1986, Ch. I, VI-X).

Hence, efficiency and sustainability need to be seen as instruments to pursue intrinsic values, aims and virtues. This is so because these nouns do not possess any intrinsic value on their own and remain to be examined in the context of the projects, and the virtues, that they help put in place.

This last assertion reinforces a premise that runs across this dissertation, the fact that progress in development needs to be measured as a function of our capacity to conceive and move towards intrinsic goals rather than instrumental ones. However, this kind of progress requires that as a society we engage on intrinsic debates about what are precisely those virtues of the good that we ought to respond to. But, in order to do so, we need to actively and tirelessly undertake public discussions on what is morally desirable and what virtues should we aim for.

In Costa Rica, there exist important critiques to the main-stream sustainability milieu that effectively link the empirical evidence gathered in their studies to their moral implications. These intellectual and political attempts to imagine development modes that follow aims other than the ones in place are great steps in moving Costa Rica towards intrinsic progress in development. Nevertheless, they face two major obstacles in doing so. First of all, the neoliberal establishment controls the overwhelming majority of mass media and thus minimizes the possibilities for public

reflection upon these and other emergent proposals. Hence, the political movements inspired by proposals such as the one developed by the civil organization *Costa Rica Solidaria* (2005) and the one submitted by the *Partido Acción Ciudadana* (2005) (Citizens' Action Party), have remained at the margins with little to no access to media or economic means to disseminate their constructive critiques. In spite of these hurdles, they have been able to gain important public support and have each received about 40 percent of the effective votes in the past two national electoral events.[3] This outcome highlights the important role of other public media such as face-to-face conversation, information booths, public forums and round tables, and the internet in triggering a much needed intrinsic debate on development ideals and goals.

Secondly, these proposals repeatedly emphasize a need for developing a more just society in 'harmony with nature'; implying that the current development model is exacerbating material differences and environmental degradation. Hence they are explicit about the desired virtues they consider worth following. Nevertheless, the moral framework informing the elaboration of empirical alternatives to meet these goals clearly remains short of articulating the moral virtue of justice in ways that would simultaneously inform our social relationships and our interaction with the nonhuman environment.

[3] According to official data provided by the Costa Rican Electoral Tribunal the PAC obtained 39.8 percent of valid votes – about 18,000 votes less (1.1 percent) than the winning faction – in the last presidential elections in 2006. By the same token, a political movement loosely articulated around the ideas expressed by Costa Rica Solidaria (CRISOL 2005) obtained 756,814 votes against the approval of the Central American Free Trade Agreement (CAFTA) in a national referendum held on October 7th 2007 – loosing by about 3 percent of valid votes (TSE 2006; 2007).

After carefully reading these proposals, one remains convinced that these groups' version of harmony with nature differs very little from the one promoted by the World Commission on Environment and Development and the existing development milieu in the country.[4]. Hence their elaborations of how precisely a society ought to relate to the natural realm remain vague and reiterate superficial terms like 'clean productive practices', without effectively giving geographic shape to their very valuable moral critique.

In sum, there is a need for a framework that effectively helps us see how a country in harmony with nature would look like; and more importantly, there is a need for a framework that helps us understand how exactly is it that harmony with nature is a good and desirable moral virtue, and what empirical and moral consequences it implies.

Herein I propose a geographic conceptualization of development that offers a way to move beyond the analytical and normative limitations characteristic of the study (and practice) of development in Costa Rica (and often elsewhere) described above. Following the theoretical work of critical-realist geographer Robert Sack, this dissertation elaborates a conceptualization of Costa Rica's development practice as a national place-making process that shapes a complex system of places encompassed

[4]For examples of the rhetoric used by the Costa Rican sustainable development discourse see the development proposal 'Agenda for the 21st. Century' (PASV 2006) and the proceedings from the government-sponsored forum: "From Forest to Society: A New Costa Rican Model of Development in Alliance with Nature" (UNED-INBio 1994).

by Costa Rica's territorial boundaries. It builds on Sack's moral geographic theory to both map the moral character of the most recent transformations of the Costa Rican place, and to elaborate concrete development alternatives for progress in tune with intrinsic geographic judgments. In doing so, I seek to contribute to a much needed public debate that actively shapes development goals informed by intrinsic moral arguments.

In fact, this dissertation and the geographic framework that informs it, echo the claims of liberal moral philosophers and development thinkers such as Martha Nussbaum, John Rawls and Amartya Sen who have argued for a conceptualization of development practice as a human endeavor that takes human beings as the means and goals of development. Nevertheless, the conceptualization of development elaborated herein seeks to expand the moral ideal of justice to include also our relationship with the realm of nature. These ideas of how we ought to engage the natural realm as we seek to transform reality give geographic shape to a menagerie of eco-centered concerns elaborated by modern environmental philosophers and activists, who have emphasized the need for an intrinsic valuation of the natural realm that transcends utilitarianism. By the same token, this dissertation takes ideas of progress as its object of study building on the work of development thinkers and philosophers such as Enrique Dussel, Arturo Escobar, Wolfgang Sachs and David Slater, who have questioned traditional ways of measuring progress as being uncritical, culturally narrow and technologically centered.

Readers familiar with any of the authors and schools of thought mentioned above may feel disappointed for this dissertation does not extensively elaborate on their contributions and surrounding debates, but rather uses their insight as input to a non-reductive geographic theory of morality, which helps put together the contributions elaborated by each of these philosophical and social-scientific traditions.

Likewise, readers seeking to find answers to questions often asked by development geographers regarding the most appropriate spatial and temporal scales to pursue environmental or social sustainability in development should look elsewhere. Indeed, this dissertation is an attempt to move academic discussions beyond such instrumental questions and compel geographers (and others) to ask what is it really that we should be sustaining in the firs place; what kind of places should be sustaining, which should we get rid off and why?

In addition it is my aim to suggest alternatives that would help Costa Rican society see, reflect, and imagine what exactly would a fraternal Costa Rican place respectful and aware of its relationship with nature look like, why would such a country be desirable, and what exactly would it mean in terms of the places we inhabit, the lives we live and the values that guide our social relationships and our interactions with the natural realm. These suggestions are offered as an effort to expand the diversity and number of voices engaged in shaping the Costa Rican reality. As such they take the progress made by Costa Ricans in the past – both in terms of building a more just and

ecologically mindful society – as a starting point rather than a source of limitless gratification. The philosophical perspective informing this dissertation sees progress towards the good and desirable as an ever receding horizon and compels us to endlessly seek to enhance the places we inhabit, the relationships they facilitate and the values they reproduce.

This dissertation is based on the premise that the intrinsic, i.e. the moral, does in fact inform the empirical and not only the other way around – as moral relativists would imply. In other words there, are no 'amoral' actions. Rather, everything that we do and takes place is inspired by conceptions of what is good and desirable. Hence we are entitled (and compelled) to judge whether or not those conceptions and the projects they support and legitimate are adequate both in moral and empirical terms. That means, from a critical-realist perspective, there are nonrelative value judgments – yet contested and open-ended – that transcend relative empirical circumstances.

The geographic framework here in presented also assumes that our place transformations will closer shape reality in a desirable way the more they consider intrinsic judgments to inform their goals. Nevertheless, intrinsic values need shape and hence geography is essential in helping us see how our ideals can be put in place. Hence this dissertation uses geographic tools – intrinsic geographic judgments – to assess progress in ways that tell us how nature conservation, bioprospecting, ecotourism and biocommercial initiatives represent progress intrinsically, how they

don't, and more importantly, how can we shape them in ways that do represent intrinsic progress. Thus, intrinsic geographic judgments allow us to transcend instrumental, relativistic and often self-interested justifications and alternatives for progress.[5]

These research objectives require corresponding research methodologies. In tune with the critical realist philosophy that informs this project, research design and methodology need to be compatible with the nature of the object of study and the purpose of the research inquiry. Following the reader will find a brief description of the research rationale and its corresponding research and writing methodology.

Ia. Research Design and Methodology

This dissertation falls simultaneously within the realm of development geography as well as within the realm of humanist geography. In fact, it is my conviction that it represents a step forward in an effort to bridge the gap between humanist geography's concerns with the ways place and space shape and are shaped (by) human experience, and the concerns of critical social science – and critical development geography, which generally focus on revealing the forces that inhibit or facilitate improvements to the conditions of human existence.[6] Indeed I herein argue that in order to understand the implications of development, we need to understand it as a force

[5] These ideas of intrinsic vs. instrumental progress and their relationship to critical-realist conceptions of the real, the good and the moral are discussed at length on sections IIIa and IIIb.

[6] In doing so, this project responds to Bebbington's (2003) call for development geography to inform and be informed by a geographic framework, while also revealing the framework's potential to enrich development studies and practice in a holistic, nonrelativistic manner.

shaping human experience in places generally referred to as 'developing countries'. This is so because human reality is shaped in place by development at the same time that it shapes development goals and objectives.

In providing a conscious and systemic reflection on the human experience as shaped by development in Costa Rica, this dissertation compels us to see development not only as a political strategy or technological feat but also as an inherently human endeavor. One that starts and ends with the human being's inescapable drive to transform its reality according to ways she deems desirable, and hence, one that needs to take human conceptions of the good and the desirable as a reference point.

The framework proposed hereby highlights the ways in which this endless transformation of reality we call development weaves elements of the human and nonhuman realms in place. Hence it brings our attention to the fact that our moral frameworks inform our relationship with the nonhuman world, and renders this relationship as a rapport between mutually constitutive realms, both in moral and empirical terms.

Last but not least, Sack's framework not only allows us to bridge humanist geography with critical social-scientific efforts, but it also reveals that humanist geography need not be either relativistic or absolutist in essence. Indeed it maps out how our place-making efforts are informed by moral virtues that are not entirely relative to the

empirical conditions that influence them. In addition it emphasizes the fact that our knowledge of reality is incomplete, and thus our intrinsic judgments guiding our place-making efforts need not be based on absolute notions of the good and the desirable, rather, these virtues are conceived as ever-receding horizons constructed and transformed on a daily basis.

Thus, Sack's framework contributes to a much-needed effort to help critical social science elaborate a nonrelativistic, nonabsolutist, but explicit and concrete normative framework. Indeed, it enriches critical social science in that it develops intrinsic geographic judgments that draw on explicit, yet open-ended and objective notions of what is good and desirable and bridge the gap between critical moral philosophy and every day life. In doing so, it renders social critiques more effective and capable of constructing place-based alternatives that draw on the geographic as well as on the moral imagination.

Given the fact that this dissertation is placed in a middle point between humanist and development geography, the fieldwork instrumental in generating the necessary information to write this dissertation also relied on a mixed methodological approach. On the one hand, this dissertation relied on a humanistic approach to geographic research that emphasizes experience rather than experimentation (Tuan 2001). As explained by Tuan, humanistic research needs to emphasize what we know instead of what we know about. Hence this portion of my fieldwork was designed to

consciously live the experience offered by the existing Costa Rican place. In tune with this premise my research sought to expand the ways and perspectives that inform my knowledge of the place called Costa Rica. This effort had the purpose of expanding my awareness of the empirical and moral texture of my object of study so that, in the end, I could map significant moral qualities and empirical characteristics woven together within the country's territory.

My experience in place of course was not based on a clean slate since it was also informed by my previous conscious and unconscious observations, and by my awareness of the historical transformations of the country as well as those brought to my attention by fellow Costa Ricans. This lived experience of the Costa Rican place was also shaped by the fact that for a portion of my fieldwork I was both researching and working at the same time – between September and December 2007. In fact, my responsibilities as a faculty member at a U.S. American educational institution, the School for Field Studies (SFS) mediated my experience and hence influenced my findings. Indeed, the Costa Rican SFS center located in Atenas, Alajuela, is conveniently called 'Center for Sustainable Development Studies'. As a result I was able to experience first hand not only what is supposed to be an established international agenda for studying sustainable development, but also to share this partly educational, partly tourist experience with U.S. students, Costa Rican and U.S. faculty and staff, and members of the community surrounding the SFS center.
My work with SFS prevented me from going to several places I planned to visit

before my fieldwork started – like Tortuguero and Cabo Blanco, but likewise, it also took me to places and offered me experiences I would not have visited had I remained based on the city of Alajuela as a full-time researcher. That is the case of organic farms and a women's coop in the Atlantic Plains; butterfly and agritourism projects in Cutris, Alajuela; the Children's Eternal Forest and the Monteverde Biological Station in Monteverde, Puntarenas; Carara National Park, the Tárcoles River estuary and its mangrove wetlands; and a trip to Nicaragua where I was able to contrast my observations in Costa Rica with the reality of its neighboring country.[7]

In addition, there were several places that I visited on the margins of my duties as a SFS faculty member with the explicit purpose of knowing them better and to draw useful information for this dissertation. These included the Organization for Tropical Studies' (OTS) La Selva Biological Station in Sarapiquí, Heredia; INBio Park in Santo Domingo, Heredia; and several trips to national parks and recreational areas such as Volcán Poás National Park, Santa Rosa National Park, La Fortuna de San Carlos, San Gerardo de Dota, and the Papagayo peninsula in Guanacaste. However, in spite of the fact that these were conscious research trips, I often was able to combine them with either tourist or academic activities, as I was often accompanied or accompanying a biologist friend – in the case of La Selva – or foreign visitors and relatives, as in many trips to La Fortuna and Volcán Poás National Park. This opportunity to combine activities was very beneficial since it allowed me to contrast

[7] A list of field trips is included in Appendix A.

my own experience with those of people I know and who were on the trip for different reasons than my own.

More importantly however, my experience of place in Costa Rica encompassed not only those representative places that more clearly illustrate the ideals – and consequences – of the sustainable development model, but it also encompassed my experience in places not generally of academic, tourist or even productive interest and thus often neglected by these interest groups. Hence, even if they are not mentioned in the Appendix, it is important to remind the reader that my observations also draw heavily on recent and previous walks around my house, my home city Alajuela and the capital San José, bus and car trips to shopping malls, other neighboring cities and rural areas, visits to farmer-markets, to the Costa Rican Congress, political gatherings, outdoors and indoors conversations with relatives, friends and strangers.

Nonetheless, my fieldwork also included more traditional archival and field research in the form of conscious study of congress proceedings, existing legislation, gray literature, institutional PR materials, newspapers, television and radio programs, tourist brochures and published literature in Spanish and English.[8] Even though my proposal specified that I would rely heavily on semistructured interviews to further support empirical fact gathering, I only conducted one such interview, namely the director of the National Parks Volunteer Association (ASVO), Luis Matarrita. After

[8] Please see Appendix C through D for a list of sources consulted.

that interview I realized that my potential contributions would be greater if I did not base my research on gathering 'important people's' opinions on the sustainable development model. Instead I recognized that I could more valuably devote my research energies to the task of grasping what both public and nonpublic actors do and preach regarding the model in question. Thus, in order to expose my self to the most influential political and academic actors within the sustainability milieu in Costa Rica, I relied on public forums devoted to the discussion of topics relevant to the subject matter – most of them held at public universities.[9] I attended several of these presentations, round-tables and debates, where I was able to both ask my own questions and listen to questions asked by others. On several occasions, my participation in these forums opened the possibility for asking these actors for further information about the positions they defend or the projects they are involved in, as was the case of biologist and environmental activist Freddy Pacheco, who facilitated important primary data used in this dissertation.

In addition, I was able to hold eye-opening conversations with Mary Luz Moreno, from the Universidad Nacional's International Center for Economic Policy; Edgardo Arévalo, faculty member at SFS and former director for scientific research at the Monteverde Conservation League; Francisco Rodríguez, former Peace Corps coordinator for Central America; Mauricio Fernández, who recently graduated from the School of Biology at the University of Costa Rica; Felipe Alpízar, former project

[9] See Appendix B for a list of forums attended.

coordinator at the United Nations Development Program, who introduced me to the Global Environmental Facility's Small Grants Program and to agritourism and butterfly farming projects in Cutris, Alajuela; and Mauricio Alpízar, who works at the Poás Volcano National Park and facilitated important information on the park's policies and visitation patterns. These of course are not the only 'specialized' individuals with whom I had the chance to talk and discuss about topics relevant to this dissertation, but they certainly are the ones that most helped me contextualize my reflections and findings.

Last but not least, there were a number of lay persons who provided not only important feedback about their experiences related to sustainable development policies, but more importantly, were kind enough to share their lives and experiences with me. On the top of the list come Adita Mora, Vinicio Antonio and their two daughters, who not only shared their dreams and hopes around butterfly farming but also did it with great spirit and humor; also Doña Miriam, Don Jorge and their family in San Gerardo de Dota; Armín Castro, an active hunter and fisherman who at 90 years of age continues to defend hunting and sport fishing as ecologically mindful practices and successfully does so by sharing his love for nature; finally, my relatives, and my parents in particular, who have never stopped revising their own assumptions about how best to engage the natural realm and how to reconcile their beliefs with the challenges posed by the degradation of the natural environment they have witnessed and taken part of.

In sum, this dissertation is the result of a mix between conscious empirical fact gathering and lived experience. It is written from a critical realist point of view which takes knowledge as incomplete and hence it should be read as a slow-speed snapshot of where my reflections on the subject matter stand. Hence, they shall not be perceived as permanent, but rather as dynamic and transitory.

The following chapter provides a brief review of the state of knowledge and public debate on sustainable development that should help the reader contextualize this work within the context of development geography in general and Costa Rican development studies/debates specifically. Thereafter, Chapter III elaborates a conceptualization of development as a place-making process, and provides the philosophical and theoretical grounds that sustain intrinsic geographic judgments. After that, Chapter IV focuses on the historical evolution of the Costa Rican place prior to the 1990's. Chapter V in turn deals with the moral transformations driving and inflicted by the advent of the sustainable development milieu; and Chapter VI concludes with suggestions to stir the Costa Rican place in the direction of intrinsic progress.

II. GEOGRAPHY, STATE OF KNOWLEDGE AND PUBLIC DEBATES ON SUSTAINABLE DEVELOPMENT IN COSTA RICA.

Over the last forty years the study of human-environment interactions has gained increasing importance within the practice of international development and its assessment. This 'green turn' has changed the goals of development initiatives worldwide from an initially narrow focus on economic growth and industrialization, to include issues of environmental and social sustainability (at least in rhetoric). [10]

As a result of this worldwide consensus among development leaders and scholars on the need to explicitly link human well-being to environmental quality, the field of development studies has increasingly given relevance to the analytical tools offered by environmental scientists, geographers and other professionals familiar with the study of environment-society interactions. The United Nations Millennium Ecosystem Assessment (MEA) is perhaps the most recent evidence of this trend.

[10] As recognized by most observers, this paradigm shift was clearly consolidated with the publication of *Our Common Future* (WCED 1987) by the World Commission on Environment and Development (WCED). The WCED report gave political appeal and practical relevance to the concept of sustainable development, which was initially codified by the International Union for the Conservation of Nature (IUCN) as conservation-driven development (see IUCN 1980 and Adams 2001, pp. 54-78). As explained above, Costa Rica was one of the first countries to embrace the paradigm shift promoted by the IUCN and the WCED.

For a concise summary of how this paradigm shift influenced policy-making in Costa Rica see Fernández-González (1994) and Evans (1997). For a review of how it influenced development projects funded by the World Bank and other development-minded institutions in Brazil see Brown (2001) and Brown and Purcell (2005). For an analysis of how it changed development goals and projects in Eastern African cities see Myers (2005), and for a review of how this shift changed the scope of development projects worldwide see Adams (2001) and Sneddon et al. (2006). See also Worster (1993) for a commentary on the reasons and implications of the largely uncritical worldwide acceptance of the sustainable development paradigm.

When studying the methodological framework implemented (and promoted) by the MEA, most geographers would recognize their findings and concerns as closely related to statements such as: "The human condition drives change in ecosystems and changes in ecosystems cause changes in human well-being"; or "[t]o understand interactions between people and ecosystems and encourage change we must examine them in the proper scale" (Island Press 2007, p.7).[11]

The importance of geography in assessing the changing interactions between human beings and ecosystems does not surprise anybody within the discipline since this research focus is central to our field of study (Kates 1987; Liverman 2004; Zimmerer 1996). In fact, geographers have readily taken a prominent role in incorporating new understandings developed by both social and ecological science into the context of development studies. In the last 20 years, geographers have shed light on key issues regarding how international development is tested and practiced, challenging its assumptions and seeking to enrich its methods and goals (see for example Batterbury et al 1997; Bebbington 2000, 2003, 2004; Bebbington and Batterbury 2001; Bebbington and Bebbington 2001; Brown 2001; Brown et al 2005; Castree 2003a, 2005a; Hecht 2006; Herlihy and Knapp 2003; Klepeis and Laris 2006; Lee and Smith 2004; Myers 2002, 2005; Slater 2004; Peet and Watts 1996; Purcell and Brown 2005; van Ufford and Giri 2003; Wall 1997; Zimmerer 1993, 1994, 2000, 2006).

[11] The Millennium Ecosystem Assessment could be considered as an update on the World Commission on Environment and Development and its follow-up, the Convention on Biological Diversity.

In fact, geographic research on development has been able to constantly reinvigorate itself by keeping up-to-date with the latest epistemological trends as they help geographers to better understand development practice and its consequences. Thus, geographers have been pioneers in incorporating perspectives as diverse as those contributed by nonequilibrium ecology (Scoones 1999, Zimmerer 1994, 2000), poststructuralism (Herlihy and Knapp 2003; Peet and Watts 1996, 2004; Zimmerer 1993),[12] critical realism (Castree 2003a, 2003d, 2005a; Forsyth 2003), postcolonialism (Raghuram 2006; Lee and Smith 2004; Slater 2004), neomarxian theory (Harvey 1996, 2000; Smith 1984; and Swyngedouw 2007), actor-network theory (Braun 2004; Castree 2003c), moral philosophy (Harvey 2000; Smith 2002; Lee and Smith 2004) and geographic theory itself (Bebbington 2003; Brown and Purcell 2005; Zimmerer and Bassett 2003).

In addition, geographers have also been able to translate these insights into more nuanced research methodologies that reflect a deeper understanding of reality. Thus the discipline has developed methodological approaches such as progressive contextualization of causal relations across space (Bebbington and Batterbury 2001; Zimmerer and Bassett 2003), qualitative research techniques (Brown 2001; Jackiewicz 2006; McCall and Minang 2005; Myers 2002; Smith 2003), discourse analysis and deconstruction (Brown 2006; Castree 2003a, Purcell and Brown 2005),

[12] Poststructuralism is herein understood as an epistemological position that emphasizes the agency of individuals and small underrepresented social groups, as opposed to structural forces, while paying important attention to meanings, the production of knowledge and their relationship to power struggles associated with the management of natural resources.

remote sensing (Morton et al. 2006; Sánchez-Azofeifa et al. 2001; Sánchez-Azofeifa et al. 2002) and geographic information systems analysis (McCusker and Weiner 2003; Robbins 2003; Sierra and Russman 2006).

Nevertheless, in spite of the increasingly insightful and often constructive critiques offered by development geography, geographers themselves have complained about the fact that the actual contributions of development geography to development theory, discourses and practices remain insignificant compared to the amount of development research undertaken by geographers (Bebbington 2003, 297). In fact, with few important exceptions, the critical perspective offered by geographers has had little success in transcending its academic boundaries (Walker 2006, pp.389-91; Watts 2003, pp.433-34). Even more so, as shown by Brown and Purcell (2005), geographers themselves often ignore empirical and theoretical insight offered by their colleagues, and thus miss the opportunity to conduct substantial research that takes this insight as a starting point.

Indeed, Bebbington has argued that this situation is caused in part because geographic research on development-environment interactions is grounded on highly dispersed theoretical frameworks, rather than being informed by (nor informing) an inherently geographic theoretical framework. Thus, researchers lack a "common geographic language" that allows them to perform comparative place-based studies, while specifically studying the causal processes that link these places across space

(2003, pp.301-2). As explained by Walker (2006, p.387), this problem is exacerbated (or revealed) by the fact that "a very large proportion of today's political ecology still focuses on individual case studies with relatively weakly developed efforts to compare or contrast these case studies, or to synthesize these studies onto broader, integrated regional or global analysis".[13] As pointed out by the author, this situation is reinforced because "some of the best efforts toward theoretical synthesis in political ecology today consist of edited volumes with broad introductory theoretical chapters followed by individual, independent case studies assembled *post hoc* under broad themes" (ibid., p.387).

Exemplary cases of this trend are the very influential compilations by Peet and Watts (1996 and 2004), the special issue from *Ecumene* 8(4) introduced by Bebbington and Batterbury (2001), and the ones by Zimmerer and Bassett (2003) and Zimmerer (2006). Finally, as Noel Castree (2005a, p.544) explains, in order to avoid the trap of idiography case-study research needs to do greater efforts in defining objects of analysis (empirically and theoretically), addressing questions about levels and scales of abstraction and establishing 'translation-rules' for comparing findings between cases.

[13] I am aware of the fact that the subfield of political ecology does not comprise all what is called development geography. Nevertheless, since the political-ecological approach has in fact permeated in one way or another the great majority of geographic research done on the study of environment-development interactions, I will use these terms interchangeably for sake of discursive clarity.

Geographic research on the implications of Costa Rica's sustainable development paradigm is not immune to this problem. Although North American and European geographers have since long been studying Costa Rica's development process, there hasn't been a major volume written on the country since Carolyn Hall published her landmark book *Costa Rica: a geographical interpretation with historical perspective* in 1984. Since then, research efforts have generally been conducted in the form of isolated case-studies and have seldom been able to provide a broader historical, geographical and theoretical contextualization of the case in question.

Perhaps the best critical geographic research done on the country's recent development initiatives comes from Noel Castree (2003a). Castree's work on the performance of Costa Rica's Institute of Biodiversity (INBio) questions its ability to fulfill its proclaimed goals of substantially contributing to the country's sustainable development through the practice of bioprospecting. His analysis is insightful and provides a rigorous treatment of the practice of bioprospecting in general and of INBio in particular. By conducting interviews, field visits and poignant archival work, Castree manages to provide an internal and substantial critique of the institute's activities. However, this long article has been the only contribution from the author in assessing the Costa Rican experience, and his critique on bioprospecting as a development tool remains to be evaluated within the broader context of Costa Rica's development paradigm and how it transforms the Costa Rican reality.

Such a contextualization is essential to understand the development process in Costa Rica given the wide-ranging popular consensus on the idea that the country needs to develop in a sustainable way. Many Costa Ricans acknowledge and welcome the fact that it is because of Costa Rica's conservation practices and presumed sustainable ways of exploiting natural resources that the country has gained widespread international recognition (Evans 1997). In addition, the benefits associated with the tourist boom, although unevenly distributed, have a positive economic impact for an influential sector of the population. Therefore, development policies that claim to have sustainability as a goal are deemed desirable *a priori* for their expected positive outcomes. In fact, when criticism for a particular initiative arises, it is generally done on the grounds of its lack of sustainability, or on the kinds of sustainability it is pursuing: environmental, social, economic, cultural, etc. Indeed in Costa Rica the instrumental meanings of sustainability remain highly disputed, while decision-makers, stakeholders and researchers are far from reaching a consensus on what is the best path to reach sustainability in ecological and socioeconomic terms (Campbell 2002, 2007; Nygren 2000). This is problematic since, as will be further emphasized below, public debate should emphasize intrinsic discussions that clarify the role that sustainability should play in shaping a better country, rather than in reinforcing assumed certainties about the desirability of sustainability becoming a goal on its own – whatever its meanings may be.

As stated above, geography is particularly well suited to provide empirical and theoretical insight to help develop contextually grounded goals for development processes that take into account their dynamic interactions with the nonhuman environment. In spite of this, Costa Rican geographic research has seldom played a significant role in critically assessing the country's development policies, and even less so, in shaping the policies themselves. Efforts worth-mentioning are the Costa Rica 'geographies' written by Flores Silva (1991), Meza-Ocampo (2001) and Vargas-Ulate (2002). However, although important because of their didactic style, they remain descriptive in nature. In contrast, most systemic, nationwide analysis of the Costa Rican development model have been conducted, or coordinated, by nongeographers.

In fact, delving beyond those rather simplistic assessments of the Costa Rican experience, I have found that several rigorous academic examinations and reports by nongovernmental organizations have succeeded in transcending superficiality at the price of reductionism and fragmentation of knowledge. Namely, numerous accounts have relied on case-studies to probe development policies and projects as they are articulated in particular communities, regions and watersheds. Still, in spite of their limitations, these efforts have produced in-depth analyses that provide useful insight into the positive and negative, expected and unexpected outcomes inherent to any development project, while also instrumental in providing guidelines for improving existing policies and projects at the national, regional and municipal levels.

This is the case of papers published by researchers working for the International Institute for Environment and Development, who have produced in-depth analyses of the social and ecological implications of the country's Payments for Environmental Services Program (PES) (Miranda et al. 2003, 2004, 2006; Rojas and Aylward 2003). In fact this topic has attracted national and international attention with articles published by scientists from U.S. universities (Sierra and Russman 2006) and a joint Costa Rican-Canadian team working at the University of Alberta's Earth Observation System Laboratory (EOSL) (Sánchez et al. 2001, 2002, 2007), who have explored land-use changes associated with forest management policies that include the Costa Rican PES program. Also in the University of Costa Rica's Center for Urban Sustainable Development (PRODUS), Rosendo Pujol and his team of researchers have produced valuable assessments on the interface between urban development and environmental quality.[14]

In addition, the Universidad Nacional's Center for International Political Economy has produced, among many other, important economic studies that estimate the contributions of protected areas to the country (Fürst et al. 2004, 2005). Also, Marcos Adamson (2006a, b), a consultant affiliated with the Center for Economic and Environmental Studies, has performed important econometric studies to determine the financial viability of the country's system of protected areas. Moreover, scholars

[14] For examples of the work produced at PRODUS see Cruz-Zúñiga (2002), Jirón-Nielsen (2000), and Sánchez-Pérez (2003).

collaborating with research institutions within the country such as the *Observatorio del Desarrollo* (ODD) have also developed very serious analyses of 'the state of development' in the country and have recommended political strategies and directions for improvement towards environmentally sound policies both at the national and the regional level (see for example Meoño-Segura 2003; MINAE-PNUMA 2002; MIVAH 2006, 135-153). But the list could go on for ever. The quality and quantity of specialized scientific research on Costa Rica's sustainable development model is impressive and could not be thoroughly summarized in this chapter. However, serious acknowledgement of the empirical evidence gathered in these publications is certainly a precondition for any kind of systemic assessment of the Costa Rican reality.

Given the rather fragmented character of the publications listed above, several institutions have made considerable efforts to assemble specialized research findings pertinent to the topic of sustainable development in the form of edited volumes and annual reports. This is the case of the volume *Costa Rica a la luz del Censo del 2000* (Rosero-Bixby 2004a) (Costa Rica in Light of the Census 2000), published by the University of Costa Rica's Central American Population Center (CCP), which assembles an excellent collection of essays ranging from gender issues and spatial segregation to interactions between population growth and deforestation, based on the findings revealed by the 2000 National Census.

Likewise the *Programa Estado de la Nación en Desarrollo Humano Sostenible* (PEN) (the State of the Nation in Human Sustainable Development Program) publishes a yearly report that brings together a wide-ranging number of studies that account for yearly progress made in terms of human sustainable development, as defined by the United Nations.

The contributions offered by the yearly reports on human sustainable development produced by the PEN since 1994, successfully avoid simplistic reductionism in that they gather research produced by scholars coming from many disciplines. Nevertheless, the approach and language favored by their conceptual framework emphasizes the social dimensions of development. Here, the social and political dimensions of the different issues and challenges that arise in the process of development in Costa Rica are studied from a lens akin to the one adopted by the United Nations Development Program (UNDP). Indeed, the reports adopt the UNDP's concept of human sustainable development and its Human Development Index as the core of its conceptual framework. Within this framework, sustainable development is conceived as a process that guarantees social integration and equity, environmental sustainability and the expansion of economic and democratic opportunities for the population (PEN 2005, p.35).

In fact, the framework used by the PEN conflates the concept of environmental sustainability with that of development in harmony with nature: "development that

does not compromise natural resource use and conservation in the present or in the future" (ibid., p.181).[15] In order to determine progress made towards this goal, the reports rely on measuring so-called 'environmental indicators' aggregated at the national level (PEN 2006, pp.417-9).[16] These are complemented by a set of case studies that evaluate the state of affairs in regards to natural-resource management issues (ibid., p.245). However useful and insightful, the empirical information provided by these studies remains largely fragmented since it is assembled *post hoc*, while informing a very simplistic theoretical framework that vaguely defines sustainability as human progress in harmony with nature. As a consequence, the relationships (spatial, conceptual, and social) between economic, social and ecological sustainability are not well established, thus handicapping the practical adequacy of the concrete policy recommendations they offer.

The PEN reports can be best described as tools for monitoring instrumental progress towards an assumed desirable goal, human sustainable development. However, they fall short from addressing the intrinsic suitability and desirability of this goal and of its associated projects, policies and transformations of the Costa Rican landscape. In fact the PEN constructs its assessments from reality without offering a thorough reflection on the moral implications of this specific development model. Hence its

[15] Compare to the definition of sustainable development provided by the World Commission on Environment and Development (987, p.43): "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

[16] With the exception of four indicators related to household energy use, exposure to natural hazards, accessibility to drinking water and waste-water treatment, which are aggregated at the county level (PEN 2006, pp. 433-4).

elaborations of what is good and desirable for the country are largely relativistic and instrumental since they arise from the empirical realities implied by the development model in question and not the other way around. That is, the country's conceptions of the good and the desirable are forced to fit those assumed by the development model, rather than adapting a development model to society's conceptions of the good and the desirable.

Hence, in order to move in a direction that emphasizes public dialogue on what should be those moral virtues that we as a society shall pursue, it is also important to keep track of existing critiques and alternatives that seek to redefine development goals and instruments. Among these it is important to highlight the public political and intellectual initiative called *Costa Rica Solidaria* (CRISOL 2005) and the development agenda proposed by the Citizens' Action Party, (PAC 2005), for their political and moral relevance in the short and long term.

The Citizen's Action Party (PAC) is the country's second political force and has strongly opposed the neoliberal development paradigm in place since the 1980's. Nevertheless, the critique offered by the PAC is mainly constructed at the structural level and is not aimed to question the relevance of sustainability as an important value and goal. Instead, the PAC has criticized the very weak labor and environmental regulations included in the Central American Free Trade Agreement with the United States (CAFTA), while also pointing out the lack of government policies explicitly

aimed at guaranteeing a fair distribution of wealth, resources and services among its citizens. In addition, it has given important attention to empowering decision making at the community level while promoting organic farming and fair trade; improved regulations to guarantee the quality and quantity of the country's water resources and appropriate solid waste management practices (PAC 2005, pp.58-75). In spite of this, the Citizens' Action Party coincides with the government in power and the PEN in supporting the premises that call for a fair, economic development 'in harmony with nature'. Herein, I find that the very important social critique offered by the PAC fails to cohesively articulate an environmental ethic that truly goes beyond the dispersed sustainability rhetoric and actually elaborates how exactly is it that the virtue of harmony with nature is going to shape our country and our development agenda, and more importantly, how is it desirable and good for the Costa Rican place.

Likewise, *Costa Rica Solidaria* – a proposal elaborated by a group of intellectuals, activists, social leaders and politicians, offers a very important moral critique to the intrinsic assumptions and negative socioecological implications associated with the existing development paradigm. Nevertheless, its contributions also remain short from truly elaborating a critique to the declared establishment-goal of seeking development in harmony with nature. Given the fact that in Costa Rica this motto has been used to justify and legitimate social and environmental degradation exacerbated by sharp spatial segregation, these proposals need to engage this apparently desirable

goal head-on, study its empirical and moral premises and its consequences, to then decide whether or not it is a desirable virtue to promote.

As expressed in the introduction to this dissertation, social criticisms like the ones elaborated by the Citizens' Action Party and *Costa Rica Solidaria*, lack a coherent moral theoretical framework that expands the virtue of justice beyond the social realm to include also the natural realm. However, this is a tough hurdle to overcome, given the fact that we cannot simply extrapolate our moral virtues – based on individual rights and respect for the other – onto the natural realm. Instead, as expressed by Michael Pollan (2006, p.325), we require a different set of moral guidelines in order to help us negotiate our relationship with nature.

Thus, the concept of harmony, which may be very helpful to guide our relationship with our neighbors, is not necessarily suitable to orient our relationship with the natural realm, nor is it concrete enough to clearly guide our dealings in the world. Instead, as Pollan (ibid., p.325) puts it: "We simply may require a new set of ethics […,] one as well suited to the particular needs of plants and animals and habitats (where sentience counts for little) as rights seem to suit us and serve our purposes today". As will be largely discussed in Chapter III and beyond, this dissertation suggests a moral framework based on virtues highlighted by geography, which are allegedly suitable to guide both our social relationships as well as our dealings with nature.

Nevertheless, before moving in that direction, it is important to reflect upon the sad fact that in spite of their importance, intrinsic questions that seriously and publicly reflect upon the virtues and values that shall be pursued by society through its development models remain unexplored at-large and even repressed. Underlying this omission lies the fact that the notions of progress that shape development models are permeated by moral values that are often taken for granted by the public and worse, avoided by development researchers that reject normative arguments in favor of an impossible amoral pseudo-objective science.

Perhaps no where else is this trend more blatantly manifested than in the exaggerated public support offered to a proposal called *Estrategia Siglo Veintiuno* (PASV 2006) (Agenda for the 21st Century). This development agenda was formulated by a very influential group of Costa Rican scientists and scholars working mainly in the natural or applied sciences. This proposal seeks to further promote sustainable development through science and innovation by means of heavy government and private support in developing the country's productive and educational infrastructure around four main areas, also called 'convergent (sustainable) technologies': biotechnology, nanotechnology, infotechnology and cognotechnology (based on the cognitive sciences) (PASV 2006, pp.30-32).

The Agenda for the 21st Century provides an insightful assessment of the Costa Rican reality in the global context and its prospects for the future. Nevertheless it is overtly

based on very vague and rather superficial assumptions about how the Costa Rican society should strive to improve itself. Specifically, they seek to transform the existing Costa Rican place, as described by 24 aggregated development parameters – including the United Nation's Human Development Index, into an 'ideal' Costa Rica defined as a country that would locate itself as an average of the present development status of 5 European countries – Norway, Denmark, Sweden, Switzerland and Finland, according to their current scores in those same parameters. Given their high marks, and their somewhat similar population sizes, the proponents of the agenda decided that these countries encompassed everything we could wish for, and thus we should try to emulate them. That means we should construct a development agenda that focuses on achieving these high marks so that we can become the ideal Costa Rica by the year 2050, an idealized country they labeled 'CR 2050'.

Furthermore, the scientists involved in this proposal found that the promotion of scientific development and technological advancement, in the form of the above-mentioned convergent technologies, are the most important tools in achieving human sustainable development. Whether this goal, which looks more like the statistical chart of a decathlon athlete who needs to score highly in several tests, has any intrinsic value for the country as a whole, is highly irrelevant to the proponents of the agenda. The fact that it actually seeks to transform the country into something that it is not, a statistical average, is blatantly revealed by metaphors such as 'launching platform' and 'CR 2050', used to refer to the strategy that would bring the country

up-to-date with the technological development needed to achieve the desired development state, i.e. CR 2050.

(For the cynical reader it is not hard to imagine that there must be some connection between the fact that one of the most influential scientists shaping and conceiving the 21st Century Agenda is a NASA astronaut who is working on the plasma-fueled engine that would take humans to Mars, and the 'launching platform' metaphor used to label the plan that would take us to a hypothetical country (in cyberspace), CR 2050).

Still the point here is not to deconstruct this proposal, which by all means should be seen as a potential tool for achieving publicly defined, culturally mindful, intrinsic goals. Instead, the point is to highlight the fact that this initiative has been overtly supported by public media, and government officials practically without criticism. In fact, one of the most influential newspapers in the country *La Nación* – the voice of the neoliberal establishment, announced the public presentation of the proposal with front-page headlines: "Country can reach development in 50 years", and a full-page report inside (La Nación, April 6th 2006, pp.1A, 18A). The reality of this phenomenon is further confirmed by the fact that the agenda has been fully adopted (at least on paper) in the current government's National Development Plan (Ministerio de Planificación 2007). In addition, it was also fully supported by the country's second political force, the PAC (Solís 2006), and it was included and

positively reviewed in the *12th Report on the State of the Nation in Human Sustainable Development* as an important contribution to the debates on the country's development process (PEN 2006).[17]

This apparent consensus about the desirability of the Agenda for the 21st Century hints to the fact that in Costa Rica there is little to no space for public dissent regarding officially sanctioned, scientifically backed elaborations of what is good and desirable for the country. This lamentable trend, whose implications and historical roots will be discussed in detail in Chapter IV, can be mainly attributed to the fact that for the last 25 years policy-making in Costa Rica has been almost exclusively informed by one set of ideas that encourages free-market principles over government planning as the most desirable political-economic arrangement – neoliberalism.

Even though this neoliberal 'supremacy' has not acted in a political and historical vacuum, since social-democratic ideas were dominant for several decades, it has been able to increasingly establish itself as hegemonic in Costa Rican society. That means neoliberalism in Costa Rica has transcended the ideological to include also the political and cultural aspects of social relations and meanings and their associated conceptions of the natural realm, while rendering alternative worldviews invisible. As a result we are currently faced with what David Harvey has called 'Thatcherite'

[17]Herein it is important to mention that the PASV and the PEN not only share similar goals and methodologies, but have also shared contributors and members of their executive boards.

policy-making – after the infamous British Prime Minister, who justified policies by claiming that "there is no alternative" (2000, p.17).

But policy absolutism is not the only threat posed by an increasingly hegemonic political-discursive arena. Indeed, given the fact that different understandings of what constitutes progress give birth to equally distant conceptions of development and its goals, intellectual debates about how to measure progress in development are generally trapped in a fight among instrumental judgments that are not resolved by reason. Instead, development goals and the means we use to measure progress in moving towards those directions are chosen to fit the needs, beliefs and views of political, epistemic and economic power-holders – rather than chosen according to their moral and empirical legitimation.

Hence, as expected, those institutions that find the funds and means to disseminate the information they reveal in their diagnoses are the ones whose views on the state of progress are reproduced – as is the case of the Stated of the Nation on Human Sustainable Development Program (PEN) and the Agenda for the 21st Century (PASV). It is precisely their concerns, agendas and interests that remain on the table every year and thus they become the targets of national debate.

As clearly exposed in the case of the Agenda for the 21st Century, such sanctioned examinations, and the parameters they use, do little to stir the debate towards the

inclusion of intrinsic judgments, and rather perpetuate the debate as an end on its own – not surprising given the hegemonic context described above. Thus, it is not a coincidence that both the Agenda for the 21st Century and the PEN use the Human Development Index as a key indicator for progress, as well as other parameters set by their own scientists, which in the case of the PASV include: number of national publications in scientific and technical journals, protection of property rights, quality of education in science and math, quantity of applications for patents, number of computers per 10,000 inhabitants and density and extension of internet services (PASV 2006, p.46).

Meanwhile, government officials draw on these sanctioned sources – the United Nations Development Program, the World Bank, the PEN and the PASV, among others – to point out achievements, mask problems, and define policy imperatives, but offer little or no reflection on the intrinsic criteria that inform the development paths suggested by these endorsed voices (PND 2007). Most recently for example Costa Rican President Arias used the country's good marks in the Environmental Performance Index (EPI) – a ranking system sponsored by the World Economic Forum – to deter any sort of criticism against his environmental agenda (Arias 2008); an agenda which by all means is more focused on meeting international environmental priorities like reducing CO2 emissions and establishing CO2 offset-mechanisms (all highly valued by the EPI), than in actually meeting national

imperatives such as access to drinking water, water pollution control and solid waste management (Esty et al. 2008; PEN 2007).

By the same token, the former Minister of the Environment, Carlos Manuel Rodríguez (2002-2006) clearly evaded criticism against the government's failure to conduct an effective environmental agenda by pointing out that critics should "consult objective reports" like the PEN, the *GEO* (published by the United Nations Environmental Program), and the 'Environmental Ranking' (a green performance indicator published by Yale University that preceded the Environmental Performance Indicator), to objectively assess the country's environmental achievements (Rodríguez 2006). Clearly then, public debate is in the middle of a dialogue amongst deaf actors that cannot but reinforce their own world views and moral frameworks that underpin the validity of one single way of knowing, sanctioned scientific knowledge reduced to arbitrary indicators for progress.

To make things worse, due to an increased polarization of the country around the questioned desirability of the Central American Free Trade Agreement, intrinsic criticisms are increasingly repressed in the form of lack of governmental support for opinion programs in television and radio, and increasingly selective newspaper editors that suppress or minimize public controversies around topics regarding

intrinsic development goals and means.[18] In addition, independent environmental activists like Anacristina Rossi, who has fought for years against illegal tourist developments in a protected area in the Caribbean coast, have faced threats against their lives and open discouragement by important government officials (La Nación January 15 2005; Rossi 2005).

These trends exclude from the public view alternative ways of knowing and interpreting reality; and what is even more dangerous, they exclude any alternative conceptions of progress that have not been sanctioned by the political-intellectual establishment. Thus reinforcing reductive notions of the good and the desirable that often become obstacles to progress. Indeed, one of the major challenges posed to critical initiatives such as the one proposed by *Costa Rica Solidaria*, is the lack of public forums for sharing their ideas with a larger audience and thus help improve them. By the same token, the development policies proposed by the Citizens' Action Party have only been addressed by the public opinion from an electoral point of view. Hence its assumptions and potential contributions to Costa Rica's development process remain yet to be thoroughly addressed and discussed in academia and elsewhere.

[18] The most notorious cases of opinion programs called off the air, due to reduced government support and/or neoliberal policies that require for programs to be profitable to hold their space on national broadcasting media, are the T.V. programs formerly directed by Alvaro Montero Mejía, university professor and former presidential candidate, whose program was shut down in March 2007 after almost 17 years on the air; likewise the inquisitive program '*Contra el Muro*' produced and directed by journalist Iris Zamora was shown for the last time on March 12 of the same year.

The following chapter reveals the ways in which the philosophical and theoretical basis of Robert Sack's framework will enrich the study of development in general, and in Costa Rica in particular. The conceptualization of development as a place-making process offered hereafter will allow us to provide development geography with an inherently geographic framework, which will strengthen this discipline by providing common grounds for comparison among case studies and across scales of analysis. In addition it will reveal how humanist geography can inform development practice by emphasizing the way it shapes human experience and vice versa. This discussion will reveal how a place-based critical conceptualization of development allows us to understand geography, landscape, and place both as settings but also as products of human action. Also it will highlight the inherently moral character of this place-making process, while also underlining nonrelativistic virtues of the good and the desirable emphasized by geography, which could serve as guideposts to orient our social relations as well as our dealings with the nonhuman world. This discussion is offered with the intention of compelling us to reflect upon the ways we are transforming reality through development practice and to develop concrete possibilities to improve this process. In other words, it seeks to set the pace for an intrinsic (and public) analysis of the empirical and moral implications of the existing development model in Costa Rica, while also revealing concrete opportunities for improving this reality according to nonrelativistic, open-ended virtues.

III. THEORETICAL FRAMEWORK

The general guidelines of this theoretical framework were developed by geographer Robert Sack in three major volumes (1992, 1997, 2003), where he articulated its relevance in informing geographic theory and public decision making. In this chapter I will lay out the main philosophical and theoretical premises that support this framework in order to show how they encourage us to rethink the way we study development, its goals and practices.

IIIa. Critical Realism and the Study of Development as Place-Making[19]

This theoretical framework is based on the premise that there is a reality independent of our knowledge of it (Sayer 1992, p.5). Likewise, it conceives the good as real and independent of cultural or personal invention (Sack 2001b, p.118). In addition it assumes that our knowledge from reality is incomplete and fallible, and therefore it doesn't claim to have a privileged knowledge of it. On the contrary this theory assumes that the real (and the good) exists "regardless of whether it is an empirical object for us and whether we happen to have an adequate understanding of its nature" (Sayer 2000, p.11). Nevertheless, the critical-realist philosophy that informs this framework also compels us "to represent what is real as best as possible" (Sack 2001b, p 120). But still, it warns us against any definitions of the good and the real since these constrict reality and what is good to particular and incomplete

[19] Herein I use the notion of critical realism as articulated in Sayer's seminal work (1992, 2000), which has been very useful in bringing the philosophical concepts developed by Roy Bhaskar into the social sciences. For a review of Bhaskar's philosophy see Collier (1994).

understandings of it. This is so because the real and the good are seen as attractive and compelling but also as infinitely complex and forever receding horizons.

Furthermore, this framework sees human beings as parts and modifiers of the real. Specifically, "we humans are constitutionally incapable of accepting reality as it is and so we create places to change it according to ideas about what we think reality ought to be" (Sack 2001a, p.107).[20] As articulated by Sack (ibid., p.107), this 'geographic problematic' unfolds in three related stages: 1) "Human beings are incapable of accepting reality as it is, and so we transform it into a new one […] in a continuous and open-ended process of transformation"; 2) we undertake this transformation of the earth by transforming places and we do so by "delimit[ing] and control [ling] an area of space through rules about what may or may not take place". Hence places-as-territories are geographical instruments we construct to "allow us to transform nature and culture, to combine and interweave the two" through place-making projects; 3) we transform reality and make places in a never-ending place-making process "because we have conceptions of what [reality] ought to be". In contrast to other living species, we are aware of this process and reflect upon it through abstract thought and linguistic representations and "have the will to decide and execute what we think *ought* to be the case".[21] The latter point reveals that the

[20] This assumption follows the arguments central to Tuan's efforts in understanding the relationship between human existence, geography, progress, free will and moral agency (1989, 1991 and 1997).

[21] This assertion holds to the extent that we assume there is an essential self but "only in the sense that there is a morally responsible agent who can reason and exercise free will"; but all other aspects of the self are assumed to be contingent (Sack 2001a, p.114).

geographic problematic is also a moral problematic in the sense that place-making processes are moral endeavors that imply normative questions of what ought to be (Sack 2001b, pp.117-120).

As moral geographic beings, we transform reality through place-making projects. Hence development as a human endeavor is herein conceptualized as a place-making process that entails specific places that transform reality. Thusly conceived, development projects transform reality (social and nonsocial) by means of place-making processes that weave together dynamic biophysical elements, social relations and institutions, and constitutive (and disputed) meanings, which are mutually related and constituted by multiscalar processes (Sack 1997, pp.27-59). This is so because, as illustrated in Figure 1, places are geographical instruments constituted by a loom-like dynamic structure made of three different loops that weave together the three mutually constitutive realms of reality, i.e. nature, social relations and meanings (Sack 2001a, p.109, 110).[22]

[22] As individual beliefs and values become socialized and materialized through place-making process they cease to be "the subjective beliefs, opinions or attitudes of individuals", rather they become generalized beliefs and meanings attached to practices within societies which are both determined and confirmed by material arrangements in place (hereafter called 'constitutive meanings') (see Sayer 1992, pp. 32-33).

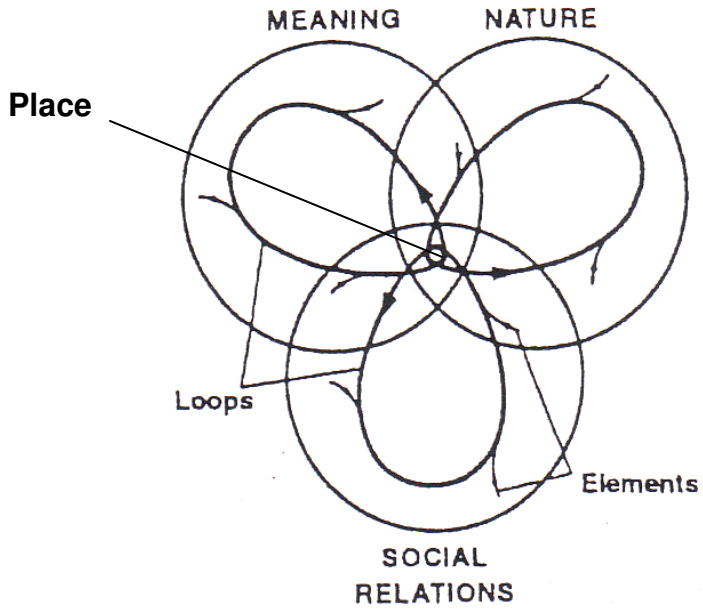

Figure 1. The loom-like dynamic structure of place (Sack 2001a, p.109)

The first of these structural loops – the 'in/out-of-place loop' – is a set of rules determined by contested social relations about what may or may not take place. These rules in turn are linked to a second structural loop defined by the spatial interactions that occur both within the place and among places. The set of practices produced by the interaction of these two loops create a landscape, and its functions and appearance can be challenged and problematized in terms of their meanings when they are coupled with the 'surface/depth loop'. Thus, in the place-making process, the rules of in/out-of-place socialize elements of meaning, nature and social relations; the 'spatial interaction loop' naturalizes elements of nature, meaning and social relations; and the surface/depth loop problematizes elements of nature, social relations and constitutive meanings (see Figure 2 below).

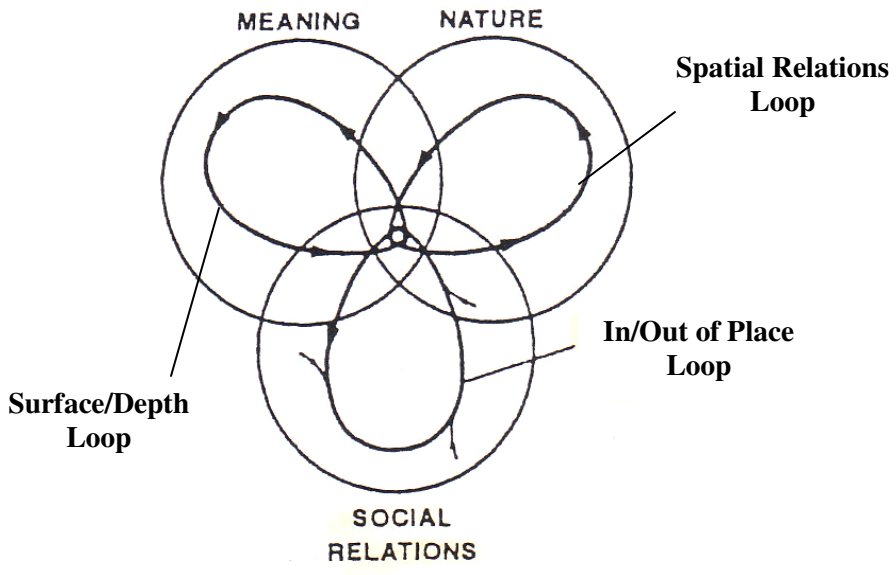

Figure 2. The three structural loops of place (after Sack 2001a, pp.109-110).

Herein it is important to emphasize, that it is through the loom-like structure of places that we are able to increase our understanding of the relationships among realms that lead to the emergence of a given place without relying on reductive explanations.[23] In the absence of the explanatory power of place as an ontological concept, we can only "think about their connections [among realms] by having one of the realms subsume the others, or translate the others into its own language" (be it economic, ecologic, or based on social arrangements) (Sack op. cit., p.110).[24]

[23] This corresponds to the critical realist understanding of reality as characterized by situations of emergence. Wherein, socioenvironmental change is attributed to the conjunction of two or more socioenvironmental forces or phenomena, which give rise to new phenomena that display properties irreducible to those of their constituents (Sayer, 2000, p.12).

[24]Reductive explanations increase our awareness of how particular realms of reality contribute to transform it, however, they do not provide a way to relate the knowledge they produce to other

In addition, an understanding of the structure and dynamics of place "provides the possibility for us to think through and trace the flows of these elements through space… [allowing us to] become geographically aware of the implications of actions resonating through space among nature, meaning, and social relations" Sack (1999, p.31). Therefore, the dynamics of place not only help us see how nature, social relations and meaning are woven together as consequence of development projects, but also how they interact with other places in space.

Thus place as an ontological concept increases our capacity to be aware of reality. It reveals our geographic nature and that of our actions and their consequences. Hence it augments our ability to change our worldview and our options in altering the way we influence places in the world (Sack 1997, p.20).

Furthermore, the structure and dynamics of place can help reveal the values that regulate and guide the way our place-making projects weave together elements of meanings, nature, and social relations. That is, it can help us understand the specific values and virtues held by particular projects in their effort to transform reality according to what their promoters believe it ought to be. As shown in Figure 3

---

understandings developed from other fragmented perspectives, thusly contributing to blur (rather than reveal) the complexity of the processes involved in the transformation of the world.

Such simplistic views of reality should be countered since they continue to permeate contemporary explanations of difference in social and environmental change. As a consequence, reductionism is very common in the formulation of theories of development, and more importantly, in the formulation of solutions to the causes of material inequalities (and related social and environmental catastrophes) around the world. For critiques of reductionism and its negative implications in development studies and practice see for example Sen (1999, pp. 3-4), Walker (2006, p. 389), and Watts (2003, pp. 433-4).

below, these values include conceptions of truth, social justice and the natural that are woven together in place and are shaped by spatial interactions among places, just as their empirical counterparts do (Sack 1999, pp.31-3). Consequently, different development projects (and their associated places) emphasize, draw together and mix different aspects of truth and what they imply to the use of meanings; different facets of justice and their associated social relations; and different elements of nature, the natural and how it is conceived as a virtue.

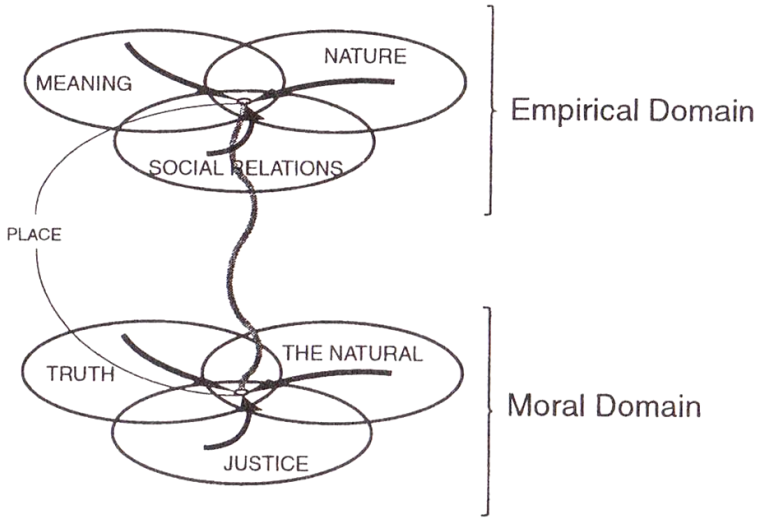

Figure 3. The relationship between the moral and empirical domains of reality (adapted from Sack 2003, p.42).

As emphasized in Figure 3, the latter claim relies on the critical realist assumption that there is a real connection between the empirical and the moral domains of reality Hence, value judgments refer to empirical facts of reality and thus it is possible to

provide arguments and reasons as for "why certain phenomena should be valued positively or negatively" without falling into the traps of dogmatism, ethnocentrism and authoritarianism (Sayer 2007, p.22).[25]

But how can we decide what mixes of elements and associated virtues should take place as consequence of our never ending efforts to transform reality? More specifically, how can we develop arguments that help us decide what virtues should inform development projects and how should the places they inspire look like?

IIIb. Geographic Judgments

A place-based dynamic ontology emphasizes the fact that geography is a necessary element of any project that seeks to transform reality. Geography allows us to understand how our actions transform this reality, while helping us shape our conceptions of what ought to be. That is, it helps us root our moral imagination to reality, giving it practical relevance and potential to inform place-making projects (Sack 1997, 2003; Tuan 1991, 1992). The relationship between morality and geography is further emphasized by the fact that even the most abstract moral reasoning has implicit geographic imaginaries, that is, conceptions of what reality ought to be, i.e. of what should take place (Sayer 2000, p.157). As elaborated below,

[25] As explained by Sack (1997, p. 19-21; 2001b, p.121) ethnocentrism, cultural relativism and other forms of relativism give rise to moral absolutism or dogmatism by relativizing moral virtues to fit the interests of particular places and projects. Thus legitimizing the repression of beliefs, ethnic and cultural differences near and far when place-making projects deem it necessary – as in the case of Nazi Germany's repression of Jews, gypsies and homosexuals throughout Europe, the enslavement of Africans and Native Americans by Western imperial powers, or the physical and psychological abuse of women in male-dominated societies.

a place-based theoretical framework offers us an effective way to link our geographical imagination to moral judgments through normative geographic guidelines. These geographic judgments can help guide our conceptions of what is possible and desirable both in the field of development science as well as in any other human endeavor concerned with the transformation of reality.

Instrumental Geographic Judgments

The structure and dynamics of place help us see how places are necessary instruments in development projects. Thus instrumentally, places can be judged according to their effectiveness in supporting a particular project's goals. As Sack puts it (1999b, p.33): "[i]nstrumentally, the appropriateness of the mix [place], and the rules and boundaries of place that support it, depends on whether it enhances or impedes the project". When the place enhances the project, it is instrumentally good and desirable.

However, even though geography allows us to trace the consequences of a particular project (and its places) outside its boundaries, "the instrumental view provides no way of judging except to switch to the values of another [larger] project that uses these other [smaller] places as part of its ends" (ibid., p.33). Thus, from an instrumental perspective, values are adapted to the goals of particular projects; hence this perspective relativizes conceptions of justice, truth and the natural and provides no useful way to judge particular practices and their geographic consequences as they link places near and far (ibid., p.33).

This is the case of the development parameters used by the Agenda for the 21st Century to judge progress towards the instrumental goal of sustainable development, which in turn justifies their recommended policies. Under these lenses, social justice becomes a high score in the human development index (HDI), the natural is reduced to its value as a potential value-added commodity and truth is limited to scientific knowledge as expressed through 'objective' parameters to measure progress. Other typical examples of such instrumental debates are the ones held every time there is a new proposal to build a hydropower dam, which is generally justified for its potential to generate clean renewable energy to support industrial growth. In contrast, critics of such projects argue that the dam is going to alter habitats and ecosystems up- and downstream, creating more harm than good. So, for promoters of the dam, the natural is reduced to the potential of a river to become a clean energy source, and for their opponents, the natural consists on the role of the river in supporting habitats.[26]

Likewise in the case of tourist developments in the coasts of Costa Rica, arguments often collide between notions of sustainability and the virtues they implicitly reproduce. On the one hand, developers and municipalities often argue that investments are important and water rights need to be issued to new hotels and housing projects. On the other hand local communities and environmentalists often argue that development needs to be stopped for sake of the sustainability of the

[26] For a summary of the controversies around proposed hydropower development in Costa Rica and the different arguments defended by industrialists, environmentalists and indigenous communities see La Nación (February 9 2008, pp.4-5A).

aquifers supporting communities and existing hotels. Hence we are faced with the choice between (midterm) sustainability of economic growth, which is held as the one true form of sustainability with the potential to meet social-justice criteria by means of increased income, and (midterm) sustainability of drinking water sources. This latter one, in turn, is held as the most important form of sustainability since it accounts for preservation of the natural and for the advancement of social justice in accessing drinking water sources.[27]

The question remains then, how do we decide? As explained by Campbell (2007), in the similar case of sea-turtle conservation, where different conservation agendas differ as for what are the notions of sustainability that should guide conservation policies, decisions are made based on which interest-group has greater lobbying power. In order to legitimate such a rationale, notions of ecological sustainability defended by the most powerful actors are portrayed as the just and desirable way to engage the natural realm. By the same token, in the case of water rights in the Costa Rican coasts, it seems that decisions are being made – and virtues being constructed – based on water-demand by developers; and in the case of power-generation policies, according to the energy requirements of industrialists and the wasteful lifestyles of a growing population.

[27] For an example of a recent debate on the appropriate use of scarce water sources in the Pacific Coast see La Nación (February 3 2008, p.6A).

Clearly then, if we are to be responsible decision-makers we shall seek to choose what takes place according to qualities and virtues that are free of the vested interests of particular projects. In order to do so (paraphrasing Sack, 1999b, p.33), we need to rely on judgments that can take particular notions of truth, justice and the natural as their objects, while also capable of shedding light into the contradictory and relativistic qualities of the numerous instrumental judgments that legitimize on-going and proposed development projects.

Intrinsic Geographic Judgments

The tendency to legitimate (and criticize) contemporary development models based on relativistic and instrumental criteria, has sunk policy-making in developing countries into a lack of rationality in decision-making. As a consequence choices among development policies tend to favor those paradigms whose legitimating values are defended by the most powerful lobbyists rather than those which are most likely to transform reality in a positive way. Development scientists, in turn (geographers included), have contributed to perpetuating this instrumental debate as they have fallen victims to a postmodern trend that opposes normative thinking in social science (favoring moral relativism or idealistic value-free deconstructions of reality) (Sayer 2000, pp.156-187, 2007; Walker 2006, 2007).[28]

[28] For a classic example of such idealistic value-free deconstructions of development projects that avoid normative conclusions see Escobar (1995).

In opposition to this trend, scholars writing from critical-realist standpoints argue that effective social critique needs to acknowledge [and make explicit] its often hidden or repressed premise – that its evaluations of practices imply a conception of human flourishing [human suffering, the good, and the undesirable]" (Sayer, 2007, p.25). Under this light, development studies, as a discipline that presupposes a concern with material and conceptual differences in the world, needs to make explicit the moral-political values that inform its practice in order to "more effectively think through what is implied by different goals and conceptions of the good"(Sayer 2000, pp.156-157).[29]

As exposed above, the moral problematic implied by the myriad of place-making projects sustained by the idea of development has a geographic nature. That means development, as any other human endeavor, emerges from the human necessity to transform reality according to social constructions of what ought to take place.
It is precisely by increasing our awareness of the often overlooked moral qualities of development practice that a geographic framework can help us clarify the moral implications associated with existing and on-coming development projects.
Moreover, as elaborated below, a geographic vantage point, allows us to explicitly elaborate conceptions of the good and the desirable that are rooted in reality, which in

[29]Thusly understood morality should go beyond abstract principles and should involve concrete responses to everyday situations "by situated actors with histories and geographies" (Sayer 2000, p. 157).

turn will allow us to assess and inform future and existing development initiatives from a nonrelativistic point of view.

In order to move in this direction (away from instrumental relativism and dogmatism), this dissertation will draw on a set of 'intrinsic geographic judgments' articulated by geographer Robert Sack in his geographic theory of morality (1997, 1999, 2003). These interdependent normative criteria to judge the moral contributions implied by place-making projects are derived from corresponding qualities of the good illuminated by geography.

The first quality of the good emphasized by geography is the value of a heightened and expanded awareness of reality. This quality derives from our own nature as geographic agents that are curious about the world and transform it into their home (Sack 1999, p.34). Geographically, this value is expressed as "seeing as completely and publicly as possible how the world and its parts or places are interrelated" (Sack 2001b, p.122). "Seeing the world as completely and realistically as we can is a public and democratic effort […] possible only if we can share knowledge and compare views". Accordingly, "it requires free and open access to information". This means, "[it] requires a complex social apparatus that promotes free and open exchange of knowledge, and provides everyone with opportunities to expand his or her horizons" (ibid., p.122).

But places, by definition, require some degree of opacity to carry on their projects. The varied degrees of opacity and transparency allowed in each place are determined by the in and out of place rules that regulate what elements of reality are included or excluded from places. Borders, as the material embodiment of these rules, are needed in order to delimit the territorial reach of those rules. Thus, if the first intrinsic quality is taken as a judgment in isolation, it would force us to condemn every single place (given the fact that no place can exist if its borders are totally porous and transparent). In fact, we find opacity in places like universities, schools, research laboratories and museums, which are places devoted to heightening awareness. The opacity required by these places, though, is justified in the long run if the information they generate is shared with the public and "if they also expand our collective ability to see reality" (Sack 2001b, p.122). This expectation is based on a second quality of the good emphasized by geography that helps balance the first one.

The second quality of the good highlighted by geography emphasizes the fact that human beings "value a more varied and complex reality than a duller and simpler one" (Sack 2001b, p.122). This is so, because as human beings "the mysteries of a varied and complex reality beckon us to see through, while a simple, dull, and empty world does not" (Sack 1999, p.37). If seen as an extension and complement to the first, this virtue becomes the second element of intrinsic geographic judgment. Geographically it means that a place shall exist as long as the degree of exclusion

generated by its borders contributes to create a more complex landscape rather than a homogenous and simpler one.[30]

By the same token "variety and complexity must to some degree be accessible to human understanding or else the world would be entirely alienating and our only recourse would be to escape from it" (Sack 2001b, p.122). That is we can only understand reality more clearly, as required by the first quality of the good illuminated by geography, if complexity is clarified. Likewise, the imperative to 'see clearly through the real' "sets a limit on variety and diversity, for diversity itself is not of value if it prevents us from understanding the real." Thus places like crack houses and slums "are to be discouraged because they so severely diminish awareness of the real" (ibid., p.122). Likewise, the imperative to enhance and sustain variety and complexity balances the need for transparency and clarification, "for if places are too transparent, if they are too much alike, or if nothing complex takes place, they do not offer enough difference and mystery to hold our attention".

These two virtues of the good illuminated by geography are the two aspects of intrinsic geographic judgment that guide our actions as place-makers.[31] Together each

[30] The skeptical reader may argue that some times (and in some places) human beings prefer monotony over diversity and complexity. This is true to the extent that particular places may encourage or discourage human curiosity and desire to know more about reality. It is precisely the point herein to emphasize that it is desirable to create places that encourage us to know more and be aware of reality and that a complex and varied reality is a precondition for this process to take place.

[31] Herein is important to reiterate that intrinsic geographic judgments do not imply that these qualities are exclusive to geography. As stated by Sack "[t]hey are independent of geography […but it does indeed hold] them in a particular relation that illuminates them most clearly" (2001, p.121-122).

virtue can set a limit on the other helping create an ever more complex and diverse set of places that increase our awareness of reality. That is, they compel us to "create places that support variety and complexity in nature and culture, […and these complex and varied places in turn] encourage us to want (and allow us) to expand our horizons and to know more". That means, they beckon us to create places that help us "see through to the real" (ibid., p.122).

Accordingly, we can use these geographic judgments to assess whether or not a project and its places are moving towards moral progress. On the contrary when these intrinsic precepts are not followed and place-making is shaped solely by relativized virtues we can only achieve instrumental progress. The absence of intrinsic judgments can lead towards landscapes dominated by autarkic, tyrannical and chaotic places. That is, when place-making overlooks the value of 'seeing through to the real', it supports autarky and secrecy; when it overlooks the value of variety and complexity it generates a landscape of sameness product of the imposition of one place over others; and when both values are violated simultaneously to the extent that in and out rules are constantly overlooked the consequence would be geographic chaos and anarchy (Sack 2001b, p.122).

The end result of an absence of intrinsic value judgments in our place-making efforts is a landscape of disorientation and moral relativism. This is so because autarkic, hegemonic and chaotic places can all be good in achieving particular (relative) and

most often morally objectionable goals. Nevertheless, even though some places are clearly evil, "for they violate one of [the criteria of intrinsic judgment] to the point where the other cannot offset it", and others are clearly good in that they contribute to both aspects of intrinsic judgment, most places are 'morally mixed', "for they contribute to neither aspect of intrinsic judgment very much". Hence intrinsic judgments help us study places and determine whether or not "they help us be on course", and if they do so in ambivalent ways, they "provide a description of how this is the case" (Sack 1999, p.39).

Intrinsic geographic judgments are based on qualities of the good illuminated by geography. In addition the geographic theory of morality articulated herein relies on a conviction that the moral – that is, intrinsic notions of the good and desirable – can illuminate the empirical, and that in doing so it shapes, animates and inspires our place-making efforts. But a morally desirable place-making agenda needs to achieve instrumental progress in fulfilling its goals. Therefore, the point here is to emphasize that as we start relying more on intrinsic judgments to guide our place-making efforts, we make instrumental judgments more like intrinsic ones. As a consequence, real, moral progress in development practice ought to be measured more and more based on the intrinsic qualities of the places created and less on their capacity to effectively promote instrumental goals and values based on self-interest and moral relativism.

The following subsection discusses how intrinsic geographic judgments reveal intrinsic, nonrelative qualities of truth, justice and the natural that shed light on whether or not a place-making project is moving us towards moral progress. They achieve this by providing place-independent criteria to judge the way particular places weave together particular qualities of truth, justice and the natural according to the purposes and goals of the projects to which they are subservient. Hence, they go beyond situated value judgments that encourage decision-making based exclusively on self-interest. Rather, they emphasize that we can move towards the good only "if the virtues and their meanings [held in place] provide others with an expanded and more varied world" (Sack 2001b, p.123).

Geographically this means that when we create places that make moral progress they compel us "to share in expanding awareness and creation of variety and complexity". By expanding communal awareness and contributing to the world's variety and complexity, such places become contributions or gifts as well (ibid., p.123). Following it will become clear how the conception of place-making (development) as a contribution to the common good is central to the way intrinsic judgments help us elaborate nonrelative moral virtues.

Truth

Intrinsic geographic judgments are elaborated from a critical realist point of view. This philosophy sees "truth in terms of a relationship of correspondence to reality"

(ibid., p.123). As explained by Sayer (1992, p.5), critical realism assumes there is a reality independent of our knowledge of it. Likewise, it sees the good as part of reality and independent of cultural or personal invention (Sack 2001, p.118). In addition critical realism assumes that our knowledge from reality is incomplete and fallible, thus critical realists do not claim to have a privileged knowledge of it. On the contrary critical realism assumes that the real exists "regardless of whether it is an empirical object for us and whether we happen to have an adequate understanding of its nature" (Sayer 2000, p.11).

As a consequence, this moral theory sees the real and good as attractive and compelling but also as infinitely complex and forever receding horizons. Nevertheless, given the critical realist correspondence theory of truth we "are somehow obligated to represent what is real as best as possible" (Sack 2001b, p.120). Furthermore, human beings are simultaneously parts and modifiers of the real, hence our actions can either enhance or diminish the real (ibid., p.120-2). And given that our knowledge of reality is incomplete and fallible we cannot define the good and the real for these definitions would constrict reality and what is good to particular and incomplete notions.

By the same token, given the imperative of correspondence and the fact that there are infinite ways of representing reality, "intrinsic geographic judgments require that there be numerous places and points of view from which to see reality, and that all of

these views be made […] open and accessible [as public contributions]" (ibid., p.123). This is so, because we can know we are increasing awareness and understanding of reality "…only if there are multiple perspectives from which to assess these views" (ibid., p.122).[32]

As explained by Sack (ibid., p.123), this limiting condition to truth posed by intrinsic geographic judgment highlights the importance of an altruistic conception of knowledge. It relies on openness and accessibility as the only way to guarantee that our efforts to know are increasing our awareness of reality and that they are increasing variety and complexity in the world. Hence "truth is not only expected to have verisimilitude, but to be open and public … to be a contribution" (ibid., p.123). Geographically it means that there is a moral obligation to sustain places that enable us "to provide everyone with the greatest opportunity to learn to have free and open access to knowledge" (Sack 1999, p.39).

Accordingly, we need to create forums where an increased number of perspectives can participate in shaping and assessing progress towards the good in ways that expand worldviews, rather than diminishing them or imposing those of the most powerful or culturally dominant. This imperative echoes the calls of anthropologists like Arturo Escobar (1995, pp.213-26) and Nestor Garcia-Canclini (1990), who call for endogenous constructions of what is desirable that transcend imposed (modernist)

[32] For a thorough elaboration of where Sack's geographic theory of morality stands in respect to modern moral philosophical thinking see Sack (1999; 2003).

notions of progress and development, which do not entirely reflect the human condition in postcolonial countries. Yet, it need not be taken as a rejection of modernist constructions overall, rather it shall be taken as an imperative to expand our moral imagination beyond imposed wisdoms, and to do so in company of a greater diversity of voices.[33] In turn, the altruistic and pluralistic requirement posed on truth by intrinsic geographic judgment calls for an engagement with issues of justice as we are compelled to increase popular awareness, knowledge and active participation in the transformation of reality.

Justice

Accordingly, for this theory "justice concerns our obligations to increase the awareness of all others" (Sack 1999, p.40). It is also about "understanding the consequences of our actions so that we can act responsibly and not diminish the chances for ourselves and others to see and move toward the real and the good" (ibid., p.40). Thus intrinsic geographic judgment encourages the removal of human suffering (disease, poverty, malnutrition, and violence) since it "diminishes our humanity; it narrows our world and prevents us from thinking and reasoning to our fullest potential" (ibid., p.40). Therefore, it also condemns censorship and secrecy, while also promoting the creation of places that sustain a more even distribution of

[33] Kiely (1999) provides a critical analysis of how development discourses (and practices) have been contested and transformed into hybrid ones that reflect the reality of both sides of the development spectrum. The call then emphasizes the need to increase the plurality of voices that take part in shaping these discourses and their associated practices. Slater (2003) in turn, elaborates on how prevalent ideas of progress have ignored the interconnections that have historically linked so-called third and first world countries shaping their conceptions of the good and the desirable.

resources that "provides everyone with the opportunity to expand horizons" (ibid., p.40).

Intrinsic geographic judgment leads to principles of justice in tune with most liberal democratic systems and their associated rights-based conceptions of justice, like the ones developed by John Rawls, Martha Nussbaum and Amartya Sen. But it does so while also showing "how they are interrelated in a functional sense of moving us toward the good" (Sack 2001b, p.123). Hence, for example, Sack's moral framework gives geographic shape to Sen's (1999) call for development practice to focus on the fostering of human capabilities. Indeed, intrinsic geographic progress requires that "people be given the opportunity to be involved in the creation of places/projects…" that allow them to give and receive the gifts of "seeing through to the real" and "variety and complexity". Thus, in order to move towards the good, we are compelled to see human rights as just and required not only for our self-interest, but also because they allow us (and others) to participate and contribute in place-making projects that transform reality in and altruistic and positive way.

As part of this process "we must mix qualities of justice such as need, merit, and equality so that those engaged in particular places/projects contribute to and receive the gift of heightened awareness and variety and complexity" (ibid., p.123). Furthermore, Sack's moral framework emphasizes "the affinities that must be present for difference to be good". This is so because justice encourages "variety and

difference insofar as these contribute to and enrich the whole and assist us in seeing more clearly". That is, difference is good as long as there are places that help us "put ourselves in the place of others and see to what degree their views are different, and how ours and theirs can be made more open" (Sack 1999, p.40).

Place draws together the virtues of truth, justice and the natural, and hence intrinsic geographic judgment helps us understand how is it that virtue of justice ought to be expanded to include both the realms of social relations and truth as well as the realm of nature[34]. In doing so it compels us to seek social arrangements – in and out of place rules – that actively increase biodiversity, complexity of habitats and landscapes, in order to enhance the real and our awareness of it. This is so because increased biodiversity and complexity of habitats enhance our own nature and our chances to be aware; and they enhance nature's capacity to provide humans and their future generations with the greatest opportunities and quality of life. Hence we are compelled to create places that augment the quantity and quality of gifts of nature available to a greater number of us. That means, intrinsic geographic judgment beckons us to expand the number of (natural) resources made available – shared – with as many of us as possible, so that we can live well enough to understand the world while securing a richer, more complex world available for us to understand (Sack ibid., p.40).

[34] In contrast to the great majority of liberal theories of justice, the place-based conception of justice presented here in transcends the social realm and seeks to inform also our interaction with the non-human environment. For a thorough analysis of how geography helps us build on the important contributions of liberal moral philosophy while expanding their reach and empirical efficacy, see Sack (1999).

These very important imperatives concerning our desirable relationship to the natural realm, as stressed by intrinsic geographic judgments, compel us to elaborate on how is it that the natural realm constitutes a virtue that human beings ought to hold and pursue that in turn shapes the virtues of justice and truth.

The Natural

Sack's geographic theory of morality assigns human life "a privileged position that comes from our capacity to reason and be aware". This capacity constitutes a moral imperative that forces us to recognize "our responsibility for encouraging diversity as a means of increasing awareness and the richness of reality". This means, intrinsic geographic judgment values biological diversity "as a means of increasing the real and awareness of the real". Hence, we are compelled to create places and sustain projects that increase public awareness of the fact "that the consequences of our actions can threaten biodiversity and the complexity of habitats to the point where these reductions endanger our own biological nature and ultimately the possibility of being aware" (Sack 1999, p.40).

The geographic framework herein presented highlights the fact that place-making processes weave together elements of nature and culture and renders both realms of reality as mutually constitutive – an assertion valid wherever there are places, i.e. everywhere. In spite of this, "no matter how places weave the threads of nature

[…with other realms,] there remain components of reality that are not humanly created or controlled [… These] amount to the idea that nature is simply there as a given." (Sack 2001b, p.124). Thus, 'the natural' as a nonrelative virtue compels us to imitate nature's 'givenness' in our place-making activities. Even though we are not capable of completely selfless giving, the natural reminds of the inherent good implicit in creating places and supporting projects that are gifts that increase complexity and public awareness of reality. By the same token, this virtue compels us to create places that enhance "nature's capacity to provide humans and their future generations with the greatest potentials" (Sack 1999, p.40). Thus it extends our gift-giving duties to future generations as well.

A focus on place-making allows us to move past the modern nature-culture dualism that dominates on-going academic debates that center around questions about the essential characteristics of 'nature' and 'culture' and diminish our capacity to understand reality (Castree 2003, Braun 2004). In contrast, place as ontological concept compels us to construct places that seek to reveal the mutually constitutive character of natural, social and conceptual elements of reality and to simultaneously avoid making places that blur such qualities. This point echoes Botkin's (1989), Pimm's (1994) and Scoones (1999) call for the scientific community to more actively seek to shed light on those questions that can inform the way we engage ecological and social dynamics as we construct places, I add.

In addition, the critical-realist framework herein presented highlights the concern of scholars engaged in science-studies who have reminded us that ever since its beginnings, scientific practice has been a social practice just as any other human endeavor and hence it cannot be separated from its social context. This is important since natural science plays an important role in shaping our understanding of ecological processes of change (the meanings we attach to them), and how these in turn shape social practices that can influence ecological processes (Botkin 1989, pp.3-13; Smith 2004; Worster 1994). [35] As Forsyth (2003) has shown, because our knowledge of reality is unstable and inherently political, it is the task of researchers to emphasize the need to critically engage that knowledge in the place-making endeavors that shape development around the world. In the absence of critical reflection assumed certainties that emphasize the need for places to render nature-culture and their dynamics as mutually exclusive, can have negative effects both in ecological and cultural terms (Botkin 1989; Chapin 2004; Zimmerer 2000).

Therefore, it is important to recognize that questions about what is the nature of nature, social relations and meanings, are still relevant, since answers to these questions shape the way we engage those same signifiers (and associated virtues) when making places. However, intrinsic geographic judgments compel us to approach these questions not as part of an (instrumental) epistemic debate but rather, as a one

[35] Worster (1994) for example, provides a history of ecological ideas as they have evolved partly as a reaction to existing worldviews, modes of production and ecological realities, and how these ideas have in turn shaped reality as well.

that informs intrinsic questions. Indeed intrinsic geographic judgments beckon us to inquire how different moral and empirical conceptions of different realms of reality matter in shaping the places we make.

Specifically, in regards to issues concerning environment-development studies, it is imperative to inquire how sustainable development policies – and their assumed virtues – shape places around the world; how these places are weaving together elements of reality and with what consequences. That means we need to reveal what are the geographic implications of making places that weave together the particular conceptions of the natural, justice and truth, associated with the sustainable development paradigm; we need to reveal what the intrinsic goals associated with this paradigm and its projects are; and we need to inquire to what extent are the places that support sustainable development projects contributing to enhance our awareness of the ecological complexity and the variety of ecological processes and life forms we depend on. But more importantly we are also compelled to suggest potential alternatives for progress based on the existing reality so that we in turn contribute to the diversity of perspectives that participate in the daily place-making efforts implied by development practice. Thus, we are reminded of the fact that these efforts are inspired by our conceptions of how the world ought to look like, and therefore we should earnestly and systemically study the moral implications of development as place-making. However, before engaging this task, we ought to pay close attention to the fact that intrinsic geographic judgments compel us to transform reality in ways

that heighten our awareness of it. This invitation compels us to place human awareness at the core of our development efforts. The following subsection explores this claim and the reasoning behind it in further detail.

Human Awareness

Sack's moral geographic theory differs from alternative moral theories in that it bases its judgments and criteria on human awareness and not solely on conceptions of social justice, human well-being, human-flourishing or ecological adequacy. In addition, it focuses on nonrelative conceptions of truth, justice, and the natural highlighted by geography. Sack's theory highlights how these virtues are interwoven in place and how this interrelation emphasizes the role of human awareness and the related virtues of complexity and variety as essential conditions if we are to move towards moral progress. This theory focuses on human awareness because it sees evil and avoidable suffering as a consequence of human ignorance (lack of awareness). According to this view, "we kill others, treat them unjustly, humiliate them and take away their dignity, and […] degrade nature" precisely because we do not fully understand what we are doing (and its consequences) (Sack 1999, p.40).

By focusing on awareness, this theory also highlights the fact that selfawareness of human agency and free will are central in helping individuals transcend structural (often repressive) elements of reality, be it natural, social or mental. This is the essence upon which the emancipatory power of reflective thinking is sustained and it

is often portrayed as the ultimate instrument and goal of human development (see Freire 1970; hooks 1994; Sen 1999).[36] Therefore, this framework encourages development scholars and other public opinion-makers to foster reflective thinking by "reveal[ing] how individual agents are constrained and empowered…", "…reduce[ing] illusion and chang[ing] people's perceptions of what is possible so that they may change their reality" (Lawson and Staeheli 1991, p.233).

Geographically the need for fostering this reflective process is revealed by the place-based ontology described above. Whereas places are conceived as having dynamic structures, it is only through human agency that they become an active part of our world, as they are simultaneously transformed by the same events they facilitate and mediate (Sack 1997, Ch. 2, 3.). Thus, we "are influenced by nature, meaning, and social relations, and by the places that interthread them, but they do not provide definitive causes for our behavior" (Sack, 2001a, p.113). Therefore, place "is something we construct, and it is through our agency that it has an effect" (Sack, 2001b, p.119). Thus, place as an ontological concept is both the conceptual and material representation of the mutually constitutive relation between structure and agency. It serves as a material and textual metaphor to bridge indivisible elements of reality.[37]

---

[36] This also constitutes the grounds for the justification of moral critique and hope for moral improvement (see Sack 1999, p. 38).

[37] In spite of the evident compatibility between the critical realist ontology articulated by Sack and Giddens' 'structuration theory' (see Giddens 1984), there are some who argue that these two ontologies should not be conceptually paired. For a discussion on this topic see Mäki and Oinas (2004,

In addition, heightened awareness of the fact that we are place-makers and that through place-making we are linked to places near and far leads to an increased awareness of the consequences of our actions in the world. As we become more conscious of the complex array of implications associated with our daily activities as place-makers, we are compelled to reflect upon the kinds of places we ought to be making and transforming. As a consequence, geographic awareness forces us to pose normative questions about how we ought to be transforming the earth, this means, how we ought to make our world. If we are to act as moral responsible agents, we must have as good an understanding of the consequences of our actions as possible. Thus we need to encourage those projects that use places that heighten our awareness of reality and increase our possibilities (and will) to share and be exposed to different ideas about what ought to take place (Sack 1999, p.34).

An emphasis on human awareness is central to the moral imperative that compels us to move beyond a moral concern that focuses on social justice to a concern also with the idea of truth and our relationship with the natural realm.[38] Although social justice constitutes "one of the three areas that geography brings to our attention as moral

---

p. 1767). The parallelisms and differences in regards to their understandings of the role of free will and agency are discussed by Sack himself (1997, pp. 144-152).

[38] Most geographers have focused on the crossroads between geography and moral issues by analytically defining that intersection as one shaping social struggles for 'spatial justice' and moral questions about spatial segregation and difference. See for example Harvey (1996, 2000); Lee and Smith (2004); and Smith (2000; 2002). For a concise overview of these and other so-called 'moral geographies' implied in the transformation of spatial arrangements (here called place-making processes) see Cresswell (2005). See also Tuan (1989; 1999; 2001), Smith (2004) for an overview of how the focus of our moral concerns have evolve with time and how humans have coped with the challenges posed by our often problematic relationship with nature. Worster (1993) talks about how an expanded concern to include nonhuman nature within society's moral framework posed a serious challenge to human society and the quest for development.

issues", by focusing on awareness, geography forces us to include issues relevant to "the search of truth and our relations with nature" (Sack 1999, p.38). These concerns are central to development science and have often been subordinate to issues of social justice. As shown above and argued by Adams et al. (2004) Escobar (1995), Sachs (1992) , Sen (1984; 1999), Worster (1993), these issues are essential to the task of guaranteeing human flourishing and cannot be addressed independently from each other. Intrinsic geographic judgments highlight the role of human agency in promoting places that guarantee that we enhance the possibilities for human flourishing by augmenting the diversity and complexity of ideas, life, habitats, landscapes, and qualities of justice such as need and merit, to effectively increase human awareness of an increasingly complex reality and our own agency as place-makers.

The following section aims to show how a focus on place's structure and dynamics also challenges us to reconsider how geographers and development scholars conceptualize and study causal relations in space; a key aspect of Sack's geographic framework, since it legitimizes the research design and methodology that informs this dissertation. This approach sharply differs from contemporary research approaches in development geography and studies of globalization and development within this and other disciplines. The next section shall also reveal how a humanist geographic framework cannot only help us reconceptualize development and globalization, but also how in doing this it allows us to expand and enrich the research methodologies

and analytical tools available to the study of development, globalization and other forms of socioecological change.

IIIc. Place-making and the Contextualization of Spatial Relations

One of the distinctive characteristics of research on development and globalization that uses a geographic approach has been the contextualization of causal relations across hierarchical scales of analysis (Zimmerer and Bassett 2003, p.2 and Bebbington and Batterbury 2001, pp.373-5). This epistemological approach has resulted from increased awareness of the need to contextualize local resource-use as a result of causal relations embedded in overarching political-economic and ecological processes (see Vayda 1983; Bebbington and Batterbury op. cit., 373-4). However, in such kind of analysis, hierarchical relationships among places in different scales and the processes linking them are very often attached with *a priori* explanatory powers. As Marston et al. (2005, p.422) wrote: "In several ways, then, the hierarchical model of scale is found deficient: it does the same heuristic work as its cousins of scope and extension; it is bound to reproduce a small-large imaginary…; and it cannot deliver engaged and self-reflexive *accounts* of social life".

In the field of political ecology, for example, such deficiencies have taken the form of a 'local trap', which Brown and Purcell (2005, p.607) described as "a widespread assumption that organization, policies, and action at the local scale are inherently more likely to have desired social and ecological effects than activities organized at

other scales". Furthermore, the same authors have shown that not only political ecologists, but development researchers and entire development programs "falsely assume that localized decision-making is inherently more socially just or ecologically sustainable" than decision-making processes which are controlled at other scales (Purcell and Brown, 2005, 279).

In more general terms Sayer reminds us that dualisms such as local-global, unique-general, independent-interdependent, nature-culture are implicit in geographical discourse, since it is hardly possible to think without them (1991, p.283). This is partly so because our modern fragmented ontologies separate reality into discrete entities for them to be studied by specialized disciplines, and thus inherently imply dualistic thinking. As described by Sack (1997, pp.2-13) and Braun (2004), as long as geography and academic disciplines in general continue to reinforce fragmented thinking (and living), dualisms will be inherent in our conceptualization of causal relations. This modern trap becomes problematic, since as Sayer explains, dualisms "can polarize whole fields of concepts, especially when aligned in parallel so that they reinforce one another". He adds that where geographers "align and conflate different dualisms, such as necessity-contingency with global-local, they tend to elide their differences, thereby generating a series of confusions" (1991, pp.283-284). It is clear also, that such a danger in conflating dualisms is extremely hard to avoid when using theoretical frameworks rooted on a scale-based ontology that has come to

embody such polarizations, as shown by Brown and Purcell (2005), and Marston et al. (2005).[39]

To avoid the traps posed by dualistic thinking, the conceptualization of development herein proposed uses place-making rather than scalar contextualization as the main analytical process to understand causal relations across space. Place as a 'structuration' process, rather than scale, is seen as a constitutive element of reality and endowed with explanatory potential. This assumption does not imply a reification of the place-metaphor. On the contrary, the place-metaphor is used as an ontological concept to avoid its reification and exploit its nonrelativistic, nonreductionist explanatory potential.

The ontological qualities of place, and systems of places, are *independent* of their size (a country, a county or a house) and they are also independent of their place in a spatial hierarchy (Sack 2001a, p.113). These qualities are "scale-independent in both senses". Thus these qualities "tell us that scale in both senses – of size and place in a nested and functional hierarchy – is derivative of place and its purpose" (ibid., p.113). Therefore from the point of view of the framework hereby presented, even though scale is considered important, it is not considered essential. This is so, because even if "the position of a place in a nested geographic hierarchy of scales may be an essential

[39] This argument holds for most practical cases even though as Hoefle (2006) points out, a vertical spatial ontology does not necessarily have to be conflated with a hierarchical order of spatial relations. If used carefully, it can also account for contingent relationships across scales.

part of the rules of a place…", "…while these relationships are important, they are contingent on what the assigned relationships among these places are and how these then become employed and transformed " (ibid., p.113).

Therefore, the framework proposed treats causal relations between places (and within them) as characterized by contingent conditions. That means, in spite of the fact that places can overlap, contain and be embedded with and by other places of smaller or larger size, the spatial relationships among them (material, political, representational) are not assumed *a priori* and become the object of study of the researcher. Thus, to borrow a phrase from Marston et al. (2005, p.422), place becomes the basis for "an ontology composed of complex, emergent spatial relations". Consequently, following this spatial ontology, herein Costa Rica is conceived as a system of places whose internal (among places within its territory) and external (with systems of places outside of its territory) spatial relations are complex and emerge as place-making processes transform them.

Globalization

A place-based spatial ontology stands in opposition to the disorienting tendency that portrays global processes, such as international development, as inevitably fluid and boundless processes of change that emerge from nowhere and are evenly relevant everywhere . Such spatial ontologies understand the world as determined by conditions of mobility, unrootedness, networks of connection and disconnection, fluid

relationships and material and discursive flows (Dixon and Jones 2004, p.95). However, this radical poststructuralist view implies that we forget that the world consists not only of "networks that fold and refold time and space", but also of "assemblages of different size, extent, and duration" (see Braun 2004, p.173). As described by Sack, there is a conceptual error in assuming that "there are 'place-less' processes that occur only in space". Rather, we need to recognize "the role of place in the foundation and generation of flows" (2001a, p.113). Under this view, we need to focus on the assemblages (herein read as places) where networks and flows (spatial relations) are actually folded and unfolded. As Marston et al. (2005, p.423) put it: "We take issue, however, with [t]his reductive visualization of the world as simply awash in fluidities, ignoring the large variety of blockages, coagulations and assemblages that congeal in space and social life".[40] [41]

---

[40] The explanatory power of the place-based ontology proposed by Sack is not only shared by the latest spatial ontologies proposed by actor-network theory as articulated by Braun (2004); Escobar (2007); Leitner and Miller (2007) and Marston et al. (2005), but also by materialist geographers such as David Harvey (2000, pp. 53-72), who have effectively shown that the current globalization wave has a material and discursive geographic history that can be tracked all the way back to its emergence in specific places at specific historical moments. Nevertheless, it is important to emphasize that the ontological places described herein need not necessarily be seen as 'local sites'. Places can be of different sizes, and can embed and overlap each other to form systems of interrelated places: a country composed of several states, which in turn encompasses several counties and towns.

[41] In spite of this coincidence, there is a fundamental difference between Sack's framework and the flat ontology articulated by Marston et al. (2005). A place-based ontology problematizes the flattening of spatial relations, since such ontology rejects the possibility of abstraction and hence, the possibility of asking normative questions in regards to how we should engage human agency in the place-making process of transforming reality. Key to the possibility of abstraction is the constitutive relationship between the self and place (*vis-à-vis* ANT's relationship between bodies and networks) (see Sack 2001a, p. 114). Selves are not just bodies or artifacts that can be seen as "nodes in a network, or rhizomes in an assemblage, where each particular part is on a par with any other, and where they join and rejoin without awareness of beginning, end or direction" (Sack 1997, p.4). While the self is embodied and possesses knowledge, human beings have "the ability to conceptually remove ourselves from our bodies through our reason that makes us aware and critical of even embodied knowledge" (Sack 2001a, p.114). As explained above, it is through human agency that places become an active part of our world, as they are simultaneously transformed by the same events they facilitate and mediate.

In addition, the apparently unintentional effort to represent causal processes across space as emerging from nowhere to expand everywhere without boundaries, has both theoretical and political implications. As explained by Sack, "scale [and fluidity] can be used to disguise power and intentions". Because "the geographic hierarchy of scales is frequently [a contested] part of social organizations", […] "process and scale can be mismatched intentionally to avoid responsibility or to doom a process to failure" (1997, p.124). This means that the construction and representation of socioenvironmental processes in particular scalar arrangements, is "not socially or politically neutral, but express [es] and re-constitute[s] physical, social, cultural, economic or political power relations" (Swyngedouw 2007, pp.10-11).

Therefore, the fact that scalar arrangements emerge from particular place-making agendas, reminds us that the transferring of responsibility to smaller-scale units associated with many development initiatives aimed at empowering local groups and communities, carries over many social and ecological implications that need to be studied (see Purcell and Brown 2005). As stated by Sack (1997, p.124), mismatches between scales of responsibility (say drinking water management) and biophysical dynamics (the nature of the hydrologic cycle), could very well go against environmentalist efforts to secure clean water or even democratic efforts to guarantee

---

Thus, human agency transforms 'nodes' into places and bodies into selves. From the ANT perspective, de Landa offers a more nuanced (perhaps even critical-realist) understanding of how human beings interact with places and networks of places (see Escobar 2007, pp. 107-109).

equal access to the resource. In fact, Sack argues that "such use of scale to mismatch can provide subtle strategies for obfuscation" of indirect political and moral responsibilities in the decision-making process, I add (ibid., p.124). In addition, as Campbell (2007) showed in her study of discourses and practices shaping sea turtle conservation policies in Costa Rica, environmentalist arguments are employed differently at the local, national and global scales in order to discount or promote certain types of rights and conservation interventions. As succinctly put by Escobar in explaining the construction of the concept of sustainable development by the World Commission on Environment and Development, the term arises from a broad process of problematization of global survival that problematizes the sustainability of the global ecosystem, rather than the sustainability (or improvement) of local realities. Within this process, the Colombian author continues (1995, pp.194-5):

> "the global is defined according to a perception of the world shared by those who rule it. Liberal ecosystems professionals see ecological problems as the result of complex processes that transcend the cultural and local context. Even the slogan Think globally, act locally assumes not only that problems can be defined at a global level but that they are equally compelling for all communities. Ecoliberals believe that because all people are passengers of spaceship Earth, all are equally responsible for [and interested in] environmental degradation."

Thus, if we assume a dynamic spatial ontology that takes the everyday material and conceptual construction of reality as a place-making process, we can argue that there is a politics to how we conceptualize processes of change and depending on how processes are conceptualized, "there derive important repercussions for social action – for how best to link social movements, […], and for highlighting social alternatives" (Marston et al. 2005, p.426). This implies that the so-called 'politics of

scale' cease to be a politics of representation to become instead an *ontological politics*, "that takes as its task the active shaping of the world, rather than its proper representation" (Braun 2004, pp.173-175).

Rather than focusing on networks and their implications (Braun 2004. p.174), a place-based ontology focuses on how networks (spatial relations) emerge from places and how they link them to one another. In order to be able to study spatial relations as they arise from processes of change such as development and globalization, it is absolutely essential to understand that their associated flows of information and goods emerge from contingent relations among and within places, which produce their scalar patterns (Sack, 2001a, p.113). Such an understanding allows us to study decision-making and processes of change at the places where they relationally emerge giving us a much clearer perspective on causal relations and their consequences in place.

This spatial ontology has important methodological implications to the practice of development geography. As we understand that the intrinsic qualities of systems of places like Costa Rica are independent of their size (a country, a county or a house), while also being independent of their place in a spatial hierarchy (so-called local, regional, global scales), we are released from unquestioned methodological recipes that emphasize the vertical contextualization of local case-studies. In doing so, this ontology validates the research approach implemented in this dissertation, which

works its way among and between systems of places that cross many scales of analysis; taking the intrinsic qualities of places (and policies) as its objects of study independently of their particular size or place in a spatial hierarchy. This methodological approach stands in opposition to the tendency to uncritically adopt the very useful – yet restrictive – approach in vogue amongst development geographers, which generally relies on the political-economic and ecologic contextualization of natural-resource use at the community level.[42]

Development geography is a social endeavor endowed with the potential to inform and shape development practice. Therefore, it cannot avoid recognizing the inherently normative character of its findings. If the field is to be relevant in shedding a critical light onto the moral issues aroused by existing and on-coming development projects, it ought to recognize place and its structure and dynamics as a basic element of a reality that is "mutually constituted by moral beings and dynamic structures" (Sack 2001a, p.107). Taking these premises seriously, we propose a nonreductionist critical conceptualization of development that is based on an inherently geographic framework that allows us to understand geography, landscape, and place both as settings but also as products of human action. Through this lens development projects become part of the daily construction of reality through place-making processes that emerge from places on both sides of the development spectrum (so-called

[42] For a classic and very influential example of such a research approach see Zimmerer (1993).

'developed' countries on the one side and so-called 'developing' nations on the other).

This geographic framework also emphasizes the need to recognize that humans are capable of becoming aware of their situatedness within the development process. Therefore, the possibility of a moral imagination that allows us to conceive how humans can ethically participate in the moral process of shaping the world depends on our recognition of this inherent capacity of the human self and how it uses places as instruments to achieve her purposes. The theory proposed hereby, compels us to study the alternatives to do so in the every day place-making process of development.

Finally, the philosophical basis that supports this approach makes it central for our research practice to identify the spatial processes behind the problems identified as we engage in the systemic study of reality. In doing so, this framework gives explicit normative relevance to social-scientific practice in general and development studies in particular. In fact, it articulates nonrelativistic, open-ended intrinsic geographic judgments that beckon us to shape places that augment complexity and diversity in the world, while enhancing the capacity of a greater number of people to be aware of such a reality and their ability to participate in the making of such places. Such a place-making agenda needs to be rooted in the existing reality of any given place or network of places. Therefore, in order to move in a direction that allows us to envision how a Costa Rican territorial organization that supports such a place-making

agenda would look like, we first need to put it in historical perspective. Thus the next chapter provides a brief overview of the historical evolution of the Costa Rican territory. It exposes its ambivalent character in terms of intrinsic geographic judgments, reveals its contributions towards intrinsic progress and highlights existing challenges to move in geographically sanctioned directions.

IV. THE COSTA RICAN PLACE: HISTORICAL PERSPECTIVE

In order to understand Costa Rica as a place, we need to go back in time and study the major forces that have shaped it. As will be clarified below, these forces have influenced and conditioned the way the country has implemented the sustainable development model originally conceived by the United Nations World Commission on Environment and Development. By the same token these forces imply opportunities, limitations and challenges to any effort to improve the on-going transformation of the Costa Rican place. By the end of this chapter, it should be clear to the reader that intrinsic arguments have not been absent of the Costa Rican place-making agenda, moreover they have often informed and legitimized political discourses and practices. Nevertheless, intrinsic judgment has been almost always subdued and ignored by particular, opportunistic, often self-interested place-making agendas. The Costa Rican place that we have right now is the product of this dialectic, its interaction with global debates and ideologies, and its relationship to local, regional and global biophysical processes.

IVa. The Costa Rican territory and its Biophysical Characteristics

In geological terms, the physical territory occupied by what today is Costa Rica is located in the youngest section of the Central American Isthmus, which includes Southern Nicaragua, Costa Rica and Northern Panama. Up until 120 million years ago, this southern-most portion of the isthmus did not exist. Instead it was occupied by the 'Central American Canal', which was an interoceanic water body that

connected what is now the Caribbean Sea to the Pacific Ocean. Hence, this natural canal divided the rest of the isthmus and North America from the South American land mass. The geologic processes (tectonic, volcanic, orogenic) responsible for shaping the topography of the country originated about 150 million years ago, during the late Jurassic period. Since then, a series of interrelated changes in the earth's crust caused by still on-going processes of plaque tectonics, orogenics, erosion, subduction and uplifting have combined with bioclimatic changes to slowly prepare the environmental and biogeographic conditions of the country's territory to which living forms are continuously adapting (Meza-Ocampo 2001, p.19; see also Hall 1984, pp.17-31). Many of these living forms made their way to what is now the Costa Rican territory as it emerged and formed out of the Central American Canal. These emerging islands served as biological corridors and filters for thousands of species that migrated north-south and vice-versa, avoiding physical barriers and following land bridges and isoclimates. Thus, the country is home to several species that were originally only located either in the northern or the southern continental masses.

Biogeographically, Costa Rica is located in the neotropic, which includes the Florida peninsula and the Mexican lowlands, Central America, the Caribbean and most of South America. Nevertheless, the climatic patterns generally linked to characteristic seasonal rotation and atmospheric circulation are altered in the country due to its relatively narrow territory, its two coasts and a complex geomorphology that displays drastic changes in altitude and mountain passes (Hall, 1984, pp.26,31). Thus, the

country is gifted with a great diversity of microclimates that imply huge variations in bioclimatic conditions within very small distances. Meza-Ocampo (2001, pp.34-35) cites for example the case of the cities of Cañas on the Pacific sector of the Tilarán Mountain Chain and La Fortuna on its Caribbean side. These two cities enjoy very different climatic conditions in spite of their physical proximity (52 kilometers apart). Whereas the surroundings of Cañas are characterized by arid savannas that receive only 1,370 millimeters of rain per year; La Fortuna presents lush ever green forests with an annual precipitation of 3,816 millimeters.

Thus, a combination of geologic history and geographic location have allowed for a great diversity of living forms to flourish in the Costa Rican territory. The latest and more reliable accounts estimate that Costa Rica is the home of at least five percent of the world's known living species. Roughly 10,000 plants, 236 mammals, 864 birds, 916 fish (781 marine and 135 fresh water species), 178 amphibians, 228 reptiles and 66,265 insects. Although in sheer numbers Costa Rica is not considered one of the twelve 'megadiverse' countries, its very high density of species is higher than that of many of those megadiverse nations. Furthermore, a considerable portion of the species found there are endemic to the territory. By the year 2002, 1,100 such species of plants had been identified, six mammals, seven birds, 19 fresh water fish, 36 amphibians, and 36 reptiles (Obando- Acuña 2002, pp.13-22). In addition, the country displays an astonishing diversity of living communities that include a variety of forests, wetlands, coral reefs and savannas.

This impressive diversity of life-forms is distributed around the country in diverse ecosystems. Most notably, Leslie Holdridge (1967) classified them under twelve different ecological life zones and twelve transition zones according to bioclimatic characteristics, (i.e., humidity, precipitation and potential evapotranspiration). These zones vary in size from 12,366 (tropical humid forests) to 102 square kilometers (subalpine paramo) and each has distinct ecologic characteristics as for the kind of soils, vegetation and dependent life forms they can sustain (Hall 1984, pp.44-58). Among these zones, high-growth forests are the ones that present the highest density of living species with as many as 100 tree species per hectare in the very humid tropical forest of the Osa Peninsula in the Pacific Southwest (Fundación Neotrópica 1988, p.36). These forests and the other ecosystems scattered around the country are of particular importance for their role in sustaining key biophysical processes. Among others, they sustain the hydrologic cycle and prevent soil erosion and nutrient degradation. The cloud forests for example, whose area of influence covers as much as 9 percent of the country and expands between 1500 and 3000 meters above sea level, trap humidity in the air and condense it contributing to sustain stable river flows during the dry season (ibid., p.37).

IVb. Early History and First Transformations as an Independent Country (13,000 B.C. – 1949)

The Costa Rican territory also served as a cultural bridge for indigenous populations migrating north and south in the American Continent. The earliest archaeological data

– lithic instruments employed in hunting and gathering activities – document first evidence of human presence somewhere between the years 13,000-8,000 B.C. (Fernández-Esquivel and Alvarado-Induni 2006, pp.11-12; Hall 1984, p.59). In spite of the fact that the Costa Rican isthmus continued to serve as a cultural bridge for indigenous populations for millennia, archaeologists have found evidence of archaic animal and plant domestication starting at around 7,000 B.C. (Fernández-Esquivel and Alvarado-Induni 2006, p.12). Likewise, there is substantial evidence that shows the development of more advanced agricultural techniques with an associated increase in lithic and ceramic production of tools for the preparation of foods – random seeds, corn, tubers – at around 3,000 B.C. (Arford and Horn 2004) and between 2,500 and 500 B.C. (Baldi 2001; Fernández-Esquivel and Alvarado-Induni 2006, pp.13-14; Horn and Kennedy 2001; Northrop and Horn 1996).

The specialization required and facilitated by the intensification and consolidation of agriculture – through the use of soil-rotation, the diversification of crops and continued consumption of animal protein – allowed for population growth and the establishment of a complex social organization as early as 500 B.C. (Fernández-Esquivel and Alvarado-Induni 2006, p.18). Such complex social arrangements implied a particular territorial organization characterized by geographically dispersed settlements and increased trade of goods among population centers (ibid., p.19; Hall 1984, pp.54-69).

Evidently, the intensification of agricultural practices, population growth and the extensive distribution of population centers, transformed the surrounding natural environment and the ecosystems it supports. These impacts were driven by means of logging and seasonal burning practices and through the intensified rational use of nutrients in the soil, as well as by the domestication of both plant and animal species (Hall 1984, pp.54-69; Horn and Kennedy 2001; Northrop and Horn 1996). In spite of this, the size of the population in what was to become Costa Rica at around the year 1500 has been estimated at 80,000 (M.E. Bozzoli cited in Evans 1999, p.4). Therefore, given this low demographic density of around 1.5 persons per square kilometer, it is probably safe to say that the first settlers of what was to become Costa Rica did not alter the existing biophysical processes in significant ways.

Although indigenous practices and social organization was significantly altered by European colonization, overall population numbers were reduced and agricultural practices continued to be driven largely by local demand, which was very low given the fact that between 1569 and 1751 the population remained below 25,000 and reached 50,000 only until the turn of the 19th Century (Flores-Silva 1991, pp.105-9). It was not until the 19th century with the increase of population size and the expansion of export-oriented agricultural practices that the Costa Rican natural landscape and its biophysical processes started to face violent transformations. At the time of independence in 1821 the population was approximately 65,000, but rose to 243,000 by 1892 and reached 1.3 million by 1963 (ibid., pp.123, 126). During those years,

cattle ranching and banana plantations in the Pacific, Northern and Caribbean lowlands, and coffee farming in the central highlands were mainly responsible for a reduction in the original vegetation coverage from approximately 91 percent of the territory, to only 64 percent between 1800 and 1950; households, coffee and sugar mills in turn polluted rivers with untreated organic wastes (Obando-Acuña 2002, pp.32-3).

Costa Rica was a country born out of liberal political and economic ideas based on the belief that a capitalist agricultural system free of the restrictions posed by the Spanish colonial rule would lead to civilization and progress (Molina and Palmer 1997, p.9).[43] Faithful to this progressive world view, Costa Ricans constantly pushed the agricultural frontier, exploited natural resources, and permanently sought to establish links with Europe as a potential market for its products and the source of intellectual and cultural inspiration. This expansive character was encouraged by the state through laws like the 1941 Landholding Information Law, which encouraged land-use changes, i.e. slash and burn agriculture by assigning 'improved' lands (i.e., deforested) a greater commercial value (Obando Acuña 2002, p.32). Indeed, at that time, the country was still highly dependent on the revenues obtained from coffee, banana, and increasingly, beef exports.

[43] As explained by Peet and Hartwick (1999, pp. 18-31), these liberal ideas grew out of classical liberal moral-philosophical and political-economic precepts in vogue in Europe during the 18th and early 19th centuries. These ideas sought to reconcile individual striving, in the form of the right to own private property and pursue private entrepreneurship, with the common good, i.e., the well-being of one's nation. Such a moral concern stood in opposition to then prevailing mercantilist ideas that emphasized the role of government (monarchy and landed nobility) in protecting and regulating trade with other states and colonies to guarantee a positive balance of trade, i.e., the common good.

In fact, the expansion, cultivation, harvesting, processing and shipping of these crops constituted the socioeconomic basis that defined the power relationships in the country; guaranteeing continued access to political and financial power to the elites controlling these activities. In fact, many observers of pre-1948 Costa Rica have described it as a coffee-based oligarchic society under increasing influence of the United Fruit Company (i.e., a 'Banana Republic').

The combination of these factors led to exploitative and corrupt postcolonial power relationships that eventually legitimized the quick but decisive civil war of 1948. This was an armed uprising that exploded when the official party refused to recognize the results of an election that they had allegedly lost to the opposition candidate Otilio Ulate. The National Liberation Army led by José Figueres Ferrer won the war and ceded power to a transitional *Junta de Gobierno* (Government Board), which in turn ceded power to Ulate in 1949 (Molina and Palmer, p.14).

The still abundant natural resources – high quality soils, large extensions of forests and abundant streams – framed a social-democratic era that started in 1949, when Figueres Ferrer abolished the already weak Costa Rican army. The positive political and economic consequences of that decision legitimized essential civil values that still constitute a founding stone of Costa Rican society. By the end of its transitional mandate, la *Junta* had also established a constitutional assembly that enacted a new Constitution. This covenant formally prohibited the existence of an armed military

body; established a new electoral body, the *Tribunal Supremo de Elecciones* (Electoral Court), to guarantee democratic elections; granted voting rights to blacks and women; and reaffirmed the social and labor rights and welfare institutions that had been created in the 1930's and 40's. These progressive changes included a 'Labor Code', a set of 'Social Guarantees', the Costa Rican Social Security System and the University of Costa Rica.[44]

Altogether, the 1949 Constitution represents the ideological basis of the so-called 'Costa Rican Second Republic', backbone of the social state, a democratic political-economic model that nourished a more egalitarian Costa Rican society and directly or indirectly legitimized Costa Rican governments for the following 35 years. Nevertheless, this project was still framed within a liberal, materialistic, progressive ideal that saw nature and its diversity as a limitless resource whose only value was defined in utilitarian terms. Thus by the time Ulate took power, the population at-large lacked the ecological awareness needed to understand the threats posed by the organic and inorganic wastes constantly dumped in the country's main rivers; rampant deforestation and ecologically insensible poaching practices.[45] Yet, this

[44] Social reforms were promoted as a response to mounting demands for better living conditions by urban labor unions and banana-plantation workers supported by the Catholic Church and the Communist Party during the 1930's and 40's.

[45]This is not to be taken as dismissive of early conservation and education efforts by pioneers like Jose Manuel Zeledón, who promoted legislation to conserve habitats around the craters of volcanoes, parks in urban areas, forests around water springs and representative species like the national flower – *guaria morada*, or the national bird – *yigüirro* (Monge-Nájera 2007). Likewise, this statement does not reject the value and existence of traditional knowledge of agroecology, climatology and ecosystems in general, both as practiced by indigenous groups as well as by peasants. Rather, this statement emphasizes generalized awareness among Costa Ricans of the threats posed by modern processes of

social-democratic world-view partly emerged echoing changes in the international political-economic arena. Therefore it remained susceptible to new understandings of society's relationship to the natural environment.

IVc. Social Democratic Transformations (1949-1978)

After the Second World War world leaders had become aware of the need to have a global political and economic order to guarantee economic stability and growth. On the political arena this effort materialized in the creation of the United Nations, which was meant to be an ideal political forum to facilitate diplomatic negotiations among countries. Such an arena should guarantee the proper political environment to foster material growth and the improvement of the quality of life everywhere. Sustained economic and material growth on the other hand could be achieved through a regulated financial, trade and economic system that would keep the world from global crisis and stagnation. Following main-stream Keynesian economics, state macroeconomic management was believed essential to guarantee full employment and economic development, while allowing for private and public property of services and means of production to coexist under the state umbrella (Peet and Hartwick 1999, pp.37-40).

Three institutions were created as result of a meeting of allied countries at Bretton Woods, New Hampshire, in 1944, with the objective of promoting this ideal on a

---

change such as industrialization, urbanization, expansion of the agricultural frontier, chemical fertilizers, pesticides, plastic packaging, the use of fossil fuels, etc.

global scale, and specially among developing countries: The International Bank for Development and Reconstruction (World Bank), the International Monetary Fund (IMF), and the General Agreement for Trade and Tariffs (GATT) (Peet and Hartwick 1999, p.40).[46] The IMF was meant to help countries avoid external debt problems through short-term loans; The World Bank was created to guarantee private bank loans for longer-term investments and productive activities such as roads, railroads, dams, and eventually educational and 'empowerment' projects; and the GATT was intended to promote trade through reduction of tariffs and the establishment of bi- and multilateral trade agreements among countries (ibid., pp.53-54).

Keynesian ideas of macroeconomic management and the promotion of welfare economics were very well received among a young generation of Costa Rican intellectuals during the 1940's. Indeed, the ideological guidelines behind the country's social-democratic development project lie within the Center for the Study of the National Problems, which was akin to Keynesian ideas. This was a young group of lawyers and intellectuals who opposed the economic domination of the United Fruit Company and the coffee-based bourgeoisie, while interested in promoting a more socially progressive, noncommunist, technocratic state.[47] Figueres Ferrer joined this group in 1945 and later founded the Social Democratic Party , which eventually became the leading political force in the country under the name *Partido Liberación*

[46] Formally created in 1947 and later named World Trade Organization (WTO) in 1994.

[47] For a selection of the writings published by the Center's main ideologist, Rodrigo Facio, see the anthology compiled by Rodríguez Vega (2006, pp. 59-295).

Nacional (National Liberation Party, PLN), funded by Figueres and his allies in 1951 (Molina and Palmer, p.13,15). Following this philosophy, the PLN pushed the social-democratic project. As a consequence the country's financial system was nationalized and the state actively guaranteed universal public access to essential services like health, education, energy, and telecommunications, while also promoting access to small-size loans for agricultural and industrial production.

In sum, Costa Rican governments created over 50 public institutions between 1950 and 1970. This allowed for a three fold increase in the number of public employees, who accounted for 10 percent of the national labor force by 1970. In total, government spending rose from 9 percent of the gross domestic product in 1950 to 15 percent in 1970. Thanks to these policies, by 1970, Costa Rica could praise itself for having one of the highest living standards in the developing world, equaling many industrialized nations in terms of literacy, life-expectancy, and size of middle class, employment and access to basic services like drinking water, electricity and medical attention (Molina and Palmer 1996, pp.15-16).

Meanwhile, an intellectual trend critical of the global development project promoted by the Bretton Woods System, was in the rise in Latin America. This alternative followed a new structuralist perspective on postcolonial development economics outlined by Raul Prebisch, a former head of the Bank of Argentina, in 1972 (Peet and Hartwick 1999, p.42). According to this view, generally referred to as 'dependency

theory',[48] conventional economic theory failed to work in Latin America because: (1) markets in the center (developed industrialized world) were imperfect, increasing competition among producers from the periphery (developing countries), while decreasing the prices of the primary goods they produced and avoiding a reduction of prices for industrial goods produced in the center; and (2) with an increase in purchase power in the center, the demand for industrial goods increases faster than the demand for primary goods (mainly produced in developing countries), causing the periphery's terms of trade to decline from the demand side[49]. As a consequence, Prebisch concluded, the solution to this 'dependency' problem laid in state-led structural change: "industrialization using an import substitution strategy". In practice this meant "replacing industrial imports with domestic production, under the cover of tariff protection, using income from primary exports to pay for imports of capital goods, state supervision of industrialization, and, paradoxically, the enlistment [of foreign investment]" (ibid., p.42).

Nevertheless, the implementation of the ISI model in Latin America produced (at best) short-term positive results, while pushing countries into great financial debts acquired to promote "high-cost, low-quality industrial output, damaging neglect of [traditional] agriculture and entrenched position for foreign capital" (ibid., pp.42-43). All this took place at the price of major environmental degradation and human health

[48] Dependency theory could be seen as an adaptation of Wallerstein's core-periphery model of the global economic system.

[49] This means, that the marginal increase in price of a unit of primary goods will always be smaller than the marginal increase in price of a unit of industrial goods.

threats through land erosion, increased monocropping, over-use of pesticides, fertilizers, and the construction of irrigation infrastructure to increase mechanized agricultural output (see Sonnenfeld 1999; Tucker 2000, pp.157-178; 218-225; 321-341; 388-406; Wright 1990).

In Costa Rica, the ISI model was incrementally put in place starting in the 1960's with disastrous consequences. Industrial production in fact started increasing in 1963, when the Central American Common Market was launched under U.S. pressures. These policies were promoted as necessary to reduce the country's dependency on imported manufactured products and to decrease its vulnerability to fluctuations in the international prices of coffee and bananas. Indeed, the country's productive sector saw a proliferation of industrial production when as many as 100 new industrial companies were formed, among which many were owned by the state and locals. Nevertheless three fourths of the necessary capital to launch these businesses came from abroad, mainly from the U.S. In addition, the government further encouraged domestic and foreign investments through low tariffs for industrial equipment, significantly draining the country's monetary reserves. Furthermore, these companies mainly focused on end-of-the-line, maquiladora-style production, thus they were never fully integrated into the local economy, reducing its contribution to the economy to the creation of mainly low-paid jobs (Molina and Palmer 1997, p.23).

In spite of the efforts to promote industrial exports, between 1966 and 1972 their aggregated value was $250 million less than the total value of raw materials and industrial equipment needed for production. Together with the amount of capital repatriated by foreign investors, these two conditions (permanently) deteriorated the country's commercial and debt payment balances. Instead of becoming the alleged 'road to development' the industrial sector became an apparatus to aggregate value to foreign capital at the same time it indebted the country by transferring to the 'center' a significantly large portion of the revenues generated by the export-oriented agricultural sector (Molina and Palmer 1997, p.24). Nevertheless, regardless of the increasing evidence for the unrealistic assumptions of the ISI model and its obvious negative consequences, government officials intensified these irresponsible macroeconomic policies through blind intervention.

In addition, the global economic crisis caused by the increase of international oil prices hit Costa Rica twice. It encouraged inflation through a rise in fuel prices and also lowered the income generated by banana and coffee exports, since their prices had fallen after a decrease in demand in industrialized countries. In fact, throughout the 1970's prices of coffee and bananas fluctuated randomly rendering these activities highly unreliable as a source of income (ibid., p.24). This adverse international scenario was further magnified by the fact that the country's large public sector had become highly inefficient, absorbing much of the available financial resources through state-owned industrial corporations that hindered private productive capacity.

The state had gone beyond supporting the private accumulation of capital to start accumulating capital on its own hands through investment in productive activities. Indeed, between 1974 and 1977 public investment in these activities grew 183 percent. By these means, increasingly corrupt politicians, if that is the definition for self-interested irresponsibility in the public sector, transformed the state apparatus into their own business, and actually labeled such a state '*el estado empresario*', the entrepreneurial state. This model reached its climax in 1974, when the government launched the Costa Rican Development Corporation (CODESA), created in 1972, as a flagship for progress and development. Yet in reality it became a huge resource-drain that funded ambitious, and obscure, industrial projects (ibid., pp.24-25).

Such uncontrolled flow of resources into publicly held enterprises encouraged political clientelism and blatant corruption within political leaders who were increasingly using public institutions for furthering their personal interests, and those of their friends, rather than the national well-being (Molina and Palmer 1997, pp.34-36). This in turn reduced accountability and professionalism within the public sector encouraging a sense of apathy and narrow self-interest among public employees, further eroding the credibility of public institutions, once respected for their active role in increasing the quality of life of Costa Ricans (Lehoucq 2005).

Irresponsible public spending and unrealistic planning shaped the decision of the ruling political class to readily acquire great amounts of loans with foreign banks as a

means to further support their agendas and, directly or indirectly, expand their bank accounts. As a consequence the country became increasingly dependent on international financial institutions for maintaining its economy afloat. In fact, by the year 1978, Costa Rica had lost its financial sovereignty to foreign debt-holders, and its politicians had successfully wasted millions of dollars in a corrupt bureaucratic gridlock. In total, the country's external debt rose from $164 million in 1970 to $1,061 million in 1978 (Molina and Palmer 1997, p.25). The end result of this unrealistic and irresponsible development model was catastrophic. By 1978 the economy was stagnated and foreign financial institutions had started calling their loans back. Simultaneously, the winds of war were already blowing in Central America. The country suffered its worst crisis since the 1930's (Molina and Palmer 1997, pp.24-25).

In sum, the social-democratic effort was a midterm success in terms of redistribution of resources, opportunities and accessibility to essential services for the majority of the population. Nevertheless, the generation of politicians that launched the policies promoted in the 1950's failed to sustain its socioeconomic achievements in the long run. In addition, they were largely unaware of the environmental consequences implicit in the wave of economic growth achieved in Costa Rica between 1949 and 1978. Although generally familiar with agricultural labor, they lacked the ecological knowledge to understand the mid- to long-term environmental impacts of industrialization, agricultural expansion and modernization. Imbedded in their

progressive world-view focused on material progress for the majority of the population, they did not fully understand that the material growth needed to satisfy the minimum conditions of the majority of Costa Ricans was directly dependent on the ecological health of the country as a whole.[50]

Mr. Figueres for example, an agricultural entrepreneur himself, had observed the importance of reforestation as a means of guaranteeing the country's wood supply, but he actually perceived the continued harvest of 'natural forests' as an obstacle to promoting reforestation: "It keeps the prices low", he said. Indeed, natural forests in Costa Rica were seen as an unlimited source of wood, which was actually cut not for its economic value but for the value of the soil beneath it. Still, when asked about the negative aspects of deforestation and soil degradation, Mr. Figueres replied: "That's all nonsense! I'll form you a soil in ten years! And if not, in eroded soil I have grown lots of coffee digging a hole and putting in good soil. I don't know why people run around repeating everything they hear!" (Cited by Hilje et al., 2002, pp.370-371, personal translation).

[50] Still, Evans (1997, pp. 53-64) and Monge-Nájera (2007) have emphasized early 'environmentalist' concerns and governmental leadership (if weak) that were materialized in the form of legislation and institutions intended to prevent forest fires (in 1909), to establish 'preserves' around Poás and Irazú Volcanoes and in the forests surrounding the Central Valley (1939), to oversee watershed management to secure hydropower generation capacity (1949), to protect water quality (1953) and wildlife (1956), and to regulate squatter settlements (in 1942 and more explicitly in 1961). These first steps however were generally characterized by lack of technical elaboration, enforcement mechanisms, appropriate funding, governmental and public support.

Therefore, it is no surprise that the total forest coverage in the country had been reduced from about 64 percent in 1950 to 25 percent in 1987 at an average rate of 60,000 hectares per year during the 1960s and 70's (Obando Acuña 2002, p.32, see Tables 1 and 2 below). This process was fueled by the expansion of the agricultural frontier and demographic growth, sponsored by government-supported policies that promoted logging to open land for cattle grazing destined to produce cheap burger meat for the U.S. market (Evans pp.38-9; Tucker 2000, pp.331-2). In addition banana plantations (and other monocultures) kept increasing their lands under cultivation and heavy pesticide use. Likewise, as the Costa Rican population grew in size, the land required to support its caloric needs grew accordingly. Altogether, by the start of the 1980s, the health and quality of the country's life-support processes and elements – ecological resilience, biodiversity conservation, and the hydrologic- nutrient- and CO2 cycles – were in constant and increasing deterioration (Fundación Neotrópica 1988).[51]

[51]Costa Rica's population grew from 800,875 people in 1950 to 1,871,780 in 1973 and 2,416,809 in 1984, about 300 percent increase in 33 years. In those years the portion of the country's population classified as urban grew from 33.5 percent to 44.5 percent, under little planning (Flores-Silva 1991, pp. 126,136). This change represents a six-fold increase in the absolute number of people living in the cities.

Table 1. Percentage of lands covered by forest in Costa Rica (1800-1999).

Year	Forest Coverage (%)
1800	91.3
1950	64
1987	25
1990	32.5
1999	43.5

Source: Obando Acuña (2002, pp.32-33).

Table 2. Average deforestation rates (1970-1999).

Period	Avg. Rate (in has/year)
1970-1980	60,000
1986-1991	43,000
1992-1996	13,000
1997-2000	5,000[52]

Source: Obando Acuña (2002, p.32); FONAFIFO (2001).

The numerous challenges that such an ecological crisis posed to the future well-being of the Costa Rican society were not less real than those posed by the economic and financial crisis the country was suffering at the time. However, the economic crisis was mainly caused by a lack of responsibility in the public sector, whereas the ecological crisis can be attributed to a lack of ecological awareness that permeated the Costa Rican society as a whole. Nevertheless, a new political-economic model was

[52] Obando-Acuña (2002) reports deforestation rates for the years 1997-2000 of 5,000 hectares; FONAFIFO (2001) data reports 3,000 hectares instead.

embraced by Costa Rican leaders with the alleged goal to bring responsibility and efficiency into the public sector. This new model also incorporated a 'green agenda' that sought to address national and international concerns for the threats posed upon the environment by existing productive practices. As will become clear below, these two agendas were brought together in Costa Rica (and the rest of the world) under the umbrella of a 'sustainable development' model.

IVd. Neoliberal Transformations (1980-present)

At the same time that Costa Rican political elites were compromising the country's financial freedom by borrowing 'petrodollars' from foreign international institutions, a new set of political-economic ideals was gaining legitimacy in England and the United States. Namely, neoliberal theories formulated as an alternative to postwar Keynesian economics and their apparent failure to prevent economic crisis and guarantee uninterrupted economic growth in these countries during the 1970's (Peet and Hartwick 1999, pp.48-9).

According to Peet and Hartwick (ibid., p.49) this economic ideology had three linked intellectual sources: (1) the Economics Department at the University of Chicago, led by Milton Friedman, and the Institute of Economic Affairs in Britain, which argued that excessive government spending encouraged monetary inflation; (2) the new classical liberalism of economists like Friedrich von Hayek, who argued that socialist-like, disaster-prone ideas like Keynesian planning should give way to

classical Smithian and Ricardian free-market principles; and (3) the dissemination by the American Heritage Foundation and other right-wing organizations of conservative political-economic ideas glorifying laissez-faire and rugged individualism.

Both Ronald Reagan in the United States and Margaret Thatcher in Britain put in place and promoted these recycled ideas during the 1980's, while already by the mid 1970's, the U.S.-backed dictatorial government in Chile implemented a "jarring" economic liberalization under the advise of the so-called 'Chicago Boys'(Perreault and Martin 2005, pp.192, 196). Furthermore, during the 1980's the World Bank and the International Monetary Fund (IMF) both adopted the precepts of neoliberal economics as the main ideology guiding their development initiatives (Peet and Hartwick 1999, pp.55-7).

In Latin America (and the rest of the third world) this political-economic model, which aimed to help countries pay their debts and achieve sustained economic growth, was promoted through a series of 'structural adjustment programs'. These were set as conditions to governments aiming to obtain mid and long term loans from the IMF and the World Bank to fund development initiatives (Peet and Hartwick 1999, p.56). Since resources from these institutions had become the only source of capital-funding for the already deeply indebted Latin American countries, the liberal adjustment programs were 'an option they could not refuse'. Williamson (1990) famously synthesized in ten points the set of policy 'recommendations' defined by

these institutions as necessary conditions for eligibility to financial funding and political support to development initiatives. The consensus reached by the IMF, the World Bank, and the U.S. executive branch over these 'guidelines' became known as the 'Washington Consensus'. Roughly speaking, they can be summarized as follows (Peet and Hartwick, pp.51-2):

1) Conservative macroeconomic policies aimed at reducing public spending.
2) Improved fiscal discipline and tax reform.
3) Reaffirmation of free-market capitalism through the privatization of state enterprises and deregulation.
4) Outward orientation through the promotion of foreign investments and export-oriented activities through financial liberalization, tax cuts, improved property rights, trade and financial liberalization.

As explained by Perreault and Pain (2005, p.196), in several Latin American countries, including Mexico, Argentina, Bolivia and Brazil, the neoliberal agenda was "initiated or strongly supported by the populist parties and populist-style politics that had previously promoted ISI policies". Costa Rica was not the exemption to the rule. By the mid 1980's, neoliberal thinking and a desire to put forward the policies outlined by the Washington Consensus had already permeated the country's main political parties, the National Liberation Party (PLN) and the PUSC (Social-Christian Union Party). In fact, since 1982, neoliberal policies were progressively implemented with funds and strategic support from the United States Agency for International

Development (Sojo 1992). After 1990, the neoliberal agenda was formally adopted as the country's official political-economic policy in the form of structural adjustment programs, also called 'shock therapies' – World Bank loans conditioned to immediate and drastic reductions of the state apparatus and cutbacks in overall public spending. As a consequence, since 1982, public per capita spending has been at an average level of 80 percent from what it was in 1980, with a peak in 1987 at 90 percent and as low as 70 percent in 1990 (PEN 2005, p.96).[53]

As expected, this process has led to a decline in the quality of essential public services such as access to drinking water, education, health care, subsidized loans for small-scale farmers and public infrastructure (Molina and Palmer, pp.34-6).[54] Sadly though, this 'side-effect' seems to have been an essential element of the neoliberal development policies promoted worldwide. As Jeffrey Sachs, a Harvard University economist, international promoter and implementer of 'shock therapies' and respected authority in development economics, put it in 1991, the key to economic reform was:

> "that several years had to pass in a valley of tears before the fruits were borne, the time depending on the boldness and consistency of the reforms – if there

[53] This trend has been consistent throughout the last two decades. Even at a time of mounting demands for increased government investment in the social sector, spending in this sector was reduced for about 1.2 percent of the country's gross domestic product between 2003 and 2006 (PEN 2007, p.129). Although, there is evidence of a reactivation of spending in this sector in 2006, it is not known if this shy reactivation is a long-term and steady one, and more importantly, if it can make up for the negative consequences of systemic decreases since the 1980s.

[54] As will be described bellow, parallel to this reduction of the state apparatus and its capacity to distribute material wealth among its citizens, governments have increasingly promoted foreign investments and export-oriented enterprises through tax exemptions seeking to offset the negative effects associated with a reduction in public spending.

> was wavering, it was easy to get lost in the valley" (Cited in Peet and Hartwick 1999, p.53).

Thus, it should not be a surprise that as a result of relative progress in meeting the guidelines set by the Washington Consensus – as revealed by steady economic growth and reduction of the state's budget, neoliberal policies have sharpened economic gaps and differences in quality of life standards among income groups in the country.[55] In fact, the *Programa Estado de la Nación* shows that the country's gross domestic product (GDP) grew 6.3 percent in 2006 and a 2.2 percent in average for the last 10 years. Yet, the Gini Coefficient, which is supposed to account for income inequalities in a country has continued to increase – about 25 percent – from a value of 0.34 in 1994 to a value of 0.42 in 2006, signaling that income inequalities are being exacerbated (PEN 2005, p.368; PEN 2007, p.395, 397). Likewise, total income amongst the richest 20 percent in the country went up from an equivalent 13.3 times the income from the poorest 20 percent in 1988 to 18.7 times in 2004 (PEN 2006, p.107). This trend is corroborated by reliable studies showing that economic growth has neither been effective in reducing the number of people living in extreme poverty – about 27 percent of households in 2006 and 30 percent of children in 2000, nor in improving the chances for social mobility and meeting basic needs amongst the most vulnerable sectors in society, which tend to be concentrated in clearly delimited rural and urban areas (Gutiérrez 2004; Méndez and Trejos 2004; PEN 2005, pp.97-117;

[55] These place-making policies have created a reality of sharp material and intellectual differences in Costa Rica and elsewhere in Latin America (Perreault and Martin 2005).

PEN 2006, pp.106-119; PEN 2007, p.106-126, 394; Picado and Salazar 2004; Rosero-Bixby 2004b).

This last point is particularly worrisome as it reveals increased spatial segregation within Costa Rican society. Demographic studies aided with geographic data bases have shown that between 1987 and 2004 the number of families living in slums has increased steadily, reaching its peak between 2002 and 2004 when the growth rate was almost 7 percent. In total more than 23,000 families have moved to slums since 1987 (PEN 2005, p.106). Likewise, studies published by the *Programa Estado de la Nación* shows that social exclusion (from opportunities for social mobility) affects one in every seven households in the country, with as many as one in every four households in the poorest Brunca and Chorotega regions, and with a minimum of one in 10 in the urban central region (PEN 2007, p.127). Overall, it hasn't come to my attention, the existence of a single socioeconomic study that does not mention increased or sustained spatial segregation and exclusion as a dominant trend in the transformation of the country's sociodemographic make-up.

In the case of access to public health services, Rosero-Bixby (2004b) and Picado and Salazar (2004) found that service-availability and geographic coverage has actually improved (since 1994 and 1984 respectively), and that differences among counties – the smallest political-administrative units – have decreased. Nevertheless, both sources emphasize the fact that marginal counties continue to be underprovided.

Likewise, it is also important to mention that improved access and geographic coverage are a result of decentralization policies that do not necessarily account for improved quality of services and increased absolute coverage. In fact, PEN (2007, p.386) shows that the percentage of economically active citizens covered by social security has been reduced from 71 to 64 percent in the last ten years for workers in the formal sector and from 77 to 48 percent for informal workers. By the same token, the same source shows that the number of hospital beds available has actually decreased from 1.71 to 1.29 per 1,000 habitants in the last ten years.[56]

To make things worse, although structural adjustment programs were supposed to bring discipline into public-spending, they largely failed to curtail corruption in the public sector. Rather, these policies increased clientelism among government officials and private enterprisers, who became the ultimate beneficiaries of government policies and favors. This irresponsible relationship was exacerbated by the fact that the main political parties, the PLN and the PUSC, had rendered themselves incapable of providing responsible political leadership for the country as they had become cold-minded electoral instruments (Molina and Palmer, p.36). Hence, these two political groups confabulated to pursue structural adjustment programs with the undeclared objective of benefiting themselves and their financial supporters. In fact, two former

[56] Needless to say, these numbers are not offered in an attempt to account for the quality of the services provided, they are offered to show that the progress in meeting the self-defined goals of decentralization policies often mask negative impacts of (neoliberal) development agendas.

This contradiction may as well be extrapolated to the educational sector where often the number of schools or students is taken as a measure of progress, while not truly assessing the quality of the service provided.

presidents: Miguel Ángel Rodríguez (1998-2002) and Rafael Ángel Calderón (1990-1994) are currently accused for their participation in corrupt political networks that received multimillion dollar bribes and kick-backs from international companies for granting them contracts as providers of services and equipment to public institutions. A third one Jose María Figueres, son of Figueres-Ferrer and president between 1994 and 1998, was accused of influence-peddling, failing to report more than a million dollars in consulting fees that he had received from private telecommunication contractors. Even though charges against Mr. Figueres have been dropped, he was immediately released from his position as president of the World Economic Forum in October 2004, because of this scandal (Lehoucq 2005, pp.141-2).

It was within this context that modern environmental ideals were first institutionalized in Costa Rica. However, modern environmentalism as a critique to contemporary values and productive practices, with few exceptions, did not reach the country in a pristine state. As described below, environmentalist ideas were universalized in the context of free-market liberalism and thus were brewed into a new concept: sustainable development. Sustainable development in turn was institutionalized in Costa Rica under a socioecological reality of growing material inequalities, reduced government spending and rampant deforestation. This reality shaped the way the global sustainability agenda was put in place in Costa Rica and thus if we are to reflect upon its transformative qualities we need to review it.

Modern environmentalism and the 'greening' of Costa Rica

Almost parallel to the advent of neoliberal ideals, the 1960's also gave way to the contemporary environmental movement in North America and Europe. This movement was triggered by increased popular awareness of the dangers posed to humans and many other living species by our own uncontrolled productive endeavors. According to Donald Worster (1993, pp.142-3), contemporary environmentalism had a clear route and goal "to save the living world around us, millions of species of plants and animals, including humans, from destruction by our technology, population, and appetites". Nevertheless, according to Worster, the only possible path to achieve this goal "was to think the radical thought that there must be limits to growth in three areas – limits to population, limits to technology, and limits to appetite and greed"(ibid., p.143).[57] But clearly, this was no easy philosophical ideal to get through on the advent of the new era of market-liberalism. Basically, as pointed out by Worster (ibid., p.143), supporting the environmentalist project, "there was a growing awareness that the progressive, secular, and materialist philosophy on which modern life rests, [...], is deeply flawed and ultimately destructive to ourselves and the whole fabric of life on the planet". Hence, achieving the environmentalist goal required "[a challenge to] that philosophy at its foundation and [to] find a new one based on material simplicity and spiritual richness– to find other ends to life than production and consumption" (ibid., p.143).

[57] The imperative need for such a drastic change was implied from the beginning of the environmentalist movement. See for example Rachel Carson's (1992) revelations of the ecological and human-health hazards associated with the indiscriminate use of pesticides to increase and sustain agricultural output in post-WWII U.S.

The need for such a radical turn never completely permeated the Costa Rican society at large (nor was it successful in drastically changing the views of the great majority of citizens in other nations). Nevertheless, there were several foreign and national individuals that in one way or another shared these ideals and helped disseminate an ecological ethic among university students and public leaders, that was the case of Leslie R. Holdridge, Alexander Skutch, Karen Mongensen, Olof Wesberg, Jorge Sancho, Rafael Lucas Rodriguez, Luis Fournier, Gerardo Budowski, Alexander Bonilla, Gary Stiles, Mario Boza, Alvaro Ugalde, Adelaida Chaverri, Alvaro Rojas and Joseph Tosi (among many others).[58] Their claims for the need to change the way Costa Ricans use their natural resources were augmented by raising social and ecological tension surrounding the expansion (and exhaustion) of the agricultural frontier.

Concerns with the challenges that these processes placed to the stability of the country as a whole gave raise to increased governmental efforts to regulate land use and land possession starting in 1942. Most notably, the government enacted the *Ley de Tierras y Colonización* (Land and Colonization Law) in 1961. This law created an institutional body, *Instituto de Tierras y Colonización* (Lands and Colonization Institute) to assign lands to landless peasants, prevent the disproportionate accumulation of lands in private hands, and set aside national lands not eligible for

[58] For a history of how such ideas were brought by foreigners and nationals into Costa Rican society see Evans (1997, pp. 15-33); for personal accounts of key actors involved in this process see Hilje et al. (2002).

agricultural exploitation (Evans 1997, pp.59-60). Even though this institution was permeated by political corruption and largely failed to fulfill its objectives, it created the first window to explicitly designate swaths of lands (i.e., forests) to be 'protected' from agricultural expansion.

To guide their work in selecting and managing these 'nature reserves', the institution, later named the Agrarian Development Institute, benefited from the technical support of the Ministry of Agriculture's Lands and Forestry Department (ibid., p.61). It was in fact through this office that in 1965 Karen Mongensen and her husband Olof Wesberg were able to promote the establishment of the first effectively protected natural reserve – an absolute biological reserve – in the country, Cabo Blanco. Nevertheless, the land and resources within the reserve, continued facing threats by squatters and poachers, as well as a lack of popular support long after it was officially established (ibid., pp.61-3; Hilje 2002, p.139). Likewise, the Lands and Colonization Law was instrumental for the creation of Santa Rosa National Monument in 1966. Even though the driving force behind its creation was the need to preserve the big cattle ranch that gave it its name as a historical-heritage site, the 3,000 acre estate indirectly protected a unique tropical dry forest (the only one in the continent's Pacific coast). [59] As well as in the case of Cabo Blanco, in spite of its new status, the

[59] The Hacienda Santa Rosa was the site of a very important battle in Central American history between a Costa Rican regiment and an invading army of US American filibusters in 1856. This army, lead by William Walker, had already controlled power in Nicaragua and aimed to conquer the rest of the region to enlarge the number of Confederate States and control the San Juan River. This river, which is also part of the border between Nicaragua and Costa Rica, was at the time an important transportation route for North American and European travelers seeking to reach California.

protected land continued to attract occasional squatters and cattle ranchers – including influential politicians among them – that used it as a source of hay during the dry season (Evans 1997, pp.63-4, 75-8).

As shown by the examples of Cabo Blanco and Santa Rosa, the new law was not strong enough to control squatters from seeking the land they so much needed, nor did it stop big ranchers from seeing dry forest ecosystems as unlimited sources of forage for their cattle. As a larger effort focused in rationally managing (protecting, conserving, developing) forest resources, the Ministry of Agriculture promoted the *Ley Forestal* (Forestry Law), which was enacted in 1969. This normative effort also provided incentives for commercial reforestation initiatives, while also stipulating a normative framework that regulated squatter settlements and commercial and noncommercial logging practices (Evans 1997, pp.64-71). Most importantly however, the law conceived (at least on paper) "the creation of a system of national parks". This system would be administered by the National Forestry Direction under the Ministry of Agriculture. Finally, according to the law, the lands within this system were to be off-limits for agricultural colonization (ibid., p.66).

The progressive measures included in the Forestry Law were barely, if at all, enforced. Even though the law received good support amongst civil society, once in place it lacked the teeth and funding needed to implement its normative framework and desired policies. However, in spite of this failure, its most significant long-term

contribution was the fact that it created the legal framework used as a basis for establishing a National Parks System in 1977 through the *Ley de Parques Nacionales* (National Parks Law) (Fernández-González 1994, p.27). The legal framework supported by this law has been instrumental in protecting, managing, and enhancing national protected areas

Notwithstanding the unquestionable importance of such institutional developments, during the 1960's and 70's the country's deforestation rate reached its peak propelled by high international prices for beef and governmental support for expansive agricultural practices. As extensive agricultural practices continued to expand, the agricultural frontier was brought to exhaustion with associated erosion problems and diminished output. In addition, together with the expansion of the agricultural frontier, population growth and industrial development created raising threats to drinking water quality and riparian ecosystems.

As a consequence environmentalist concerns not only began to be materialized (if not as ideally desired) in ecologically minded legislation, but their ideas, supported by empirical research, continued to influence policy interests as they were further pursued and disseminated by several institutions. Particularly relevant for their role in promoting a broad environmentalist agenda were the Costa Rican Association for the Conservation of Nature (ASCONA), funded in 1972, the School of Environmental Sciences at the Universidad Nacional, created in 1973, the School of Biology at the

University of Costa Rica, funded in 1957, the Organization for Tropical Studies, which started its operations in Costa Rica in the 1960s, and the first National Congress on Natural Resource Conservation in 1974 (Evans 1997, pp.15-32; Fernández-González 1994, pp.26-28, Hilje et al. 2002). These institutions were instrumental in expanding environmental concerns beyond deforestation and in leading public struggles against environmental degradation that included opposition to extractive practices such as bauxite-mining, in-land transportation of foreign oil, poaching, and burning of primary forests (Pacheco 2007).

In spite of these efforts in developing broad environmental awareness of the ecological problems associated with indiscriminate material growth and economic development in the country, rampant deforestation continued to be perceived as the main environmental problem. This perception did not only influence the Forestry Law but has shaped national environmental policies ever since. In fact, the main contribution of the environmentalist movement during the 1960s and 70s was the creation, development and popular legitimation of the National Park System as an important tool to conserve forest-associated natural resources.

In fact, sustained by the tireless leadership of individuals such as Alvaro Ugalde, Mario Boza, Olof Wesberg, and Samuel Budowski, the financial support from international institutions like the IUCN, the WWF and the Peace Corps, and the political bearing of Costa Rican leaders, the country's protected areas covered, at

least on paper, 945,900 hectares by 1985 – about 18 percent of the country's territory (ODD 2005, p.14). These areas had come to be organized and managed according to eight different management categories that hold the conservation of ecosystemic and biological diversity, drinking water sources, and the promotion of scientific research, as their most important objectives (Article 35, Organic Law of the Environment). Table 3 below shows the territorial extent of protected areas according to each management category as of 2006.

Table 3. Management categories and their territories (PEN 2007, p.405)

Management Category	**Area (in hectares)**
National Park	628,900
Biological Reserve	22,036
Wildlife Refuge	236,032
Forestry Reserve	216,257
Protection Zone	175,713
Wetland	66,723
Absolute Natural Reserve	1,334
National Monument	230
Total	1,326,585

Notwithstanding its success in promoting the conservation of natural habitats from productive exploitation, the environmentalist critique was not a central value informing the national place-making agenda. In fact, it was not until the 1980s that the Costa Rican society began to value protected areas as development instruments with a potential to transform the Costa Rican place in intrinsically desirable ways.

IVe. Sustainable Development and Place-making in Costa Rica

As explained above, the ideas promoted by the environmental movement posed an almost insurmountable challenge to the postwar economic machinery and its very philosophical foundations as another stage of the progressive modern project. Thus, world leaders had to devise a "less strenuous" alternative that would find a middle ground between 'radical' environmental concerns and the apparent need for growth and development of all societies in the world, as implicit in the prevalent world economic order (Worster 1993, p.143). The middle ground found was labeled sustainable development. As phrased by Worster, the term had a strong appeal worldwide for "its international political acceptability among the rich and poor nations alike, in its potential for broad coalition among many contending parties" (ibid., p.143). To be sure, 'sustainable development' is the focus of almost every major debate about environment and development. It is "the best-known and most commonly cited idea linking environment and development, [and] it is also the best documented" (Adams 2001, p.23).

According to Adams (2001, p.78), the term was first explicitly discussed during the UN Conference on the Human Environment at Stockholm, Sweden in 1972. The meeting was originally called to address environmental concerns of industrialized countries; but, in order to meet the fears of developing countries against 'northern' interventionism, "the idea was put forward that concern for the environment need not adversely affect development" (ibid., p.54-59, 78).

However, sustainable development was first codified in the *World Conservation Strategy* (1980) (WCS), a document prepared over more than two decades by conservationist predominantly affiliated with the International Union for the Conservation of Nature (IUCN) (ibid., pp.54, 78). This document "suggested that development and conservation could be made compatible through better and timelier planning" (ibid., p.79). It stressed the importance of pursuing three basic priority requirements: (1) Maintenance of ecological processes and life support systems, (2) preservation of genetic diversity, and (3), sustainable utilization of species and ecosystems (ibid., pp.62, 79). Nevertheless, according to Adams (2001, p.69), the WCS:

> "[was] primarily theoretical rather than applied in what it has to say about development. It barely began to address the larger issues of national economic management [...], let alone [...] questions of international political economy. [...] nothing beyond generalities about the gulf in wealth between North and South, or the dependence of one upon the other".

As Robert Prescott Allen wrote "the problem was that it [WCS] wanted to sell conservation to the development constituency, but it didn't understand what the development constituency was like. The conservationists didn't see that development was the driving force of human affairs" (cited in Adams 2001, p.69).

Hence, it was not until 1983, with the establishment of the United Nations World Commission on Environment and Development (WCED) under the direction of Gro Harlem Brundtland, Norwegian Prime Minister, that sustainable development made it

into the political arena of international development (ibid., p.70). In 1987 the Commission published its report, *Our Common Future*, which famously defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987, p.43). The critical objectives for achieving the goal of sustainable development as defined by *Our Common Future* can be summarized as follows (WCED 1987, p.49):

1) Reviving growth
2) Changing the quality of growth,
3) Meeting essential needs for jobs, food, energy, water and sanitation,
4) Ensuring a sustainable level of population,
5) Conserving and enhancing the resource base,
6) Reorienting technology and managing risk,
7) Merging environment and economics in decision making

According to Adams (2001, p.72), most prominent among these objectives is the focus on growth:

> "economic growth is seen as the only way to tackle poverty, and hence to achieve environment-development objectives. It must, [...], be a new form of growth: sustainable, environmentally aware, egalitarian, integrating economic and social development".

This statement reveals the intrinsic compatibility between the WCED's understanding of economic development and that of the neoliberal project. According to Adams, "the Brundtland Report's vision [...] was predicated on the need to maintain and

revitalize the world economy". Indeed, for the WCED this meant (1987, p.89, underline added):

> "more rapid economic growth in both industrial and developing countries, freer market access for the products of developing countries, lower interest rates, greater technology transfer, and significantly larger capital flows both confessional and commercial".

Evidently, from this point of view it is impossible to tell the neoliberal agenda and the 'sustainable' agenda from each other. Sustainable development, as defined by the WECD, basically seeks to achieve a global economic order, which would guarantee sustained economic growth through a free-market system that acknowledges the social costs of environmental degradation, while allowing for more democratic decision making processes. Therefore, it is not surprising that sustainable development was so readily adopted by the neoliberal governments that have ruled Costa Rica since the 80's.

Because of its international and national appeal, as an environmentally sound and just goal, the sustainability discourse has served to directly legitimize the implementation of neoliberal ideas in Costa Rica and has dominated the environment and development debates for the last 25 years. Thus, as explained in Chapter II, the main-stream scientific and media coverage of environment and development issues has uncritically focused on determining the instrumental progress achieved towards sustainable management of resources, sustainable planning, sustainable livelihoods, clean development mechanisms, sustainable policy-making, sustainable production,

etc., through so-called, 'sustainable development indicators' and their accompanying reports and case-studies.

Sustainable neoliberal development, as a combination of neoliberal policies and natural conservation practices, started to be put in place in Costa Rica by 1986 in the form of a new ministerial branch, *Ministerio de Recursos Naturales Energía y Minas* (MIRENEM) that would coordinate all efforts related to environmental management and natural resources exploitation. As a further step in this direction, in March 1987 the Costa Rican government formed an executive office to coordinate the formulation of a 'National Conservation Strategy for Sustainable Development' (ECODES) to integrate conservation and development policies as suggested by the World Commission on Environment and Development (Quesada-Mateo1989, pp.5-7).

This effort brought together more than 150 national and international professionals from private and public sectors that prepared 19 sector-specific strategies. These policy guidelines were first presented to the International Union for the Conservation of Nature in February 1988 and in October of the same year to the national public by means of a public congress (ibid., pp.5-6). The general objectives proposed in the final document are basically an adapted (and vague) combination of the goals formulated by the World Conservation Strategy and the objectives of the WCED, these included: maintaining essential ecological processes, preservation of biological diversity, sustainable utilization of species and ecosystems, improvement of quality of

life, leveling-off the rural-urban differences, improved management of nonrenewable resources and those of tourist potential, defining long-term, realistic demographic policies, emphasis on environmental ethics, a healthy economy, social justice and civilian traditions, and the promotion of individual and collective responsibilities to guarantee a harmonious relationship with the natural environment (ibid., p.7).

As explained above, long before ECODES, Costa Rican governments had already been actively involved in developing and strengthening a system of public conservation areas and national parks, which by the year 1990 encompassed 20 percent of the Costa Rican territory (ODD 2005, p.14). These places for conservation were instrumental in sustaining and reproducing the general objectives promoted by the World Commission on Environment and Development. In addition, this institutional framework gave Costa Rica an edge in its capacity and appeal to tap on the resources made available by international financing institutions after the Rio Conference of 1992, which meant to put into practice sustainable development policies world wide.

More importantly, Costa Rica had already gained international praise and recognition for its on-going efforts in conserving biodiversity within its territory, while further pursuing progressive and liberal development initiatives. In addition, Costa Rican governments and national and international entrepreneurs were quick in identifying a new tourist niche to be born. Suddenly, Costa Rica did not only offer beautiful

beaches and a peaceful, stable political environment for investors, but it also offered a green, attractive face ready to be admired by adventure-seeking (ecologically mindful) tourists from the U.S. and elsewhere (Monge-Nájera 2007; PEN 2007, pp.197-205).

Furthermore, in tune with neoliberal ideology, national governments further encouraged national and foreign investments in the tourist sector and export-oriented industry through highly controversial and corruption-prone tax-based incentives and a very successful 'free zone' system for maquiladora-style industries. Following trade-mark neoliberal trickle-down policies, these investments were lured to the country by U.S.- and European-trained international trade experts working for the Ministry of Foreign Trade (COMEX) and the semi-private Coalition of Development Initiatives, in an effort to offset social deterioration associated with decreased government spending in the social sector. Overall, direct foreign investment as a percentage of the country's GDP has gone up from less than one percent in 1982 to 6.3 percent in 2006 (COMEX 2007b).

Among the initiatives intended to advance export-oriented industries, we find Chapter XXVII of Law 7092. This law grants tradable tax-exemptions, in the form of government bonds, to Costa Rican export-oriented industries. It has been highly controversial as bonds were issued to several companies that faked exports to illegally receive multimillion dollar compensations (La Nación Online, April 4 1997;

September 5 1998; November 2 1998). Likewise, Article 20 of Law 7210 (Free-Zone Law) grants privileges to export-industries that include tax and tariff exemptions on fuel and additives, equipment, raw inputs, market products; as well as reduced energy bills, and ten-year exemptions from the payment of territorial taxes – derogated in 1995; exemptions from paying sales taxes and taxes on all actives and capital; temporary (8 to 12 years) exemptions on taxes to revenues and on municipal taxes (10 years). Article 21 in turn obliges the government to provide initial training for employees at no cost for companies.

As a result of these incentives total exports per capita have increased from $359.7 in 1982 to $2104.3 in 2007, while the portion of exports produced within the free-zone regime has gone up from 12.3 percent of total exports in 1995 to 54.2 percent in 2007 (COMEX 2008; 2008a). Ironically perhaps, though not unexpected given the ultimate neoliberal goal of enhancing trade across borders, the country's balance of trade went from a negative 19 million dollars in 1982 to an outrageous negative of 3,333 million dollars in 2006 (COMEX 2007c).

By the same token, Article 11of Law 6990 (Law of Incentives for Tourist Development) offered huge tax exemptions to entrepreneurs investing in the sector – up to 25 percent of their annual revenues, with the alleged purpose of advancing the development of the tourist industry. These incentives have largely subsidized tourist development in the country and have mainly favored the largest national corporations,

often allowing for investors to cover as little as 50 percent of the costs of a particular project. In total this mechanism paid no less than $262 million (2005 dollars) between 1985 and 2000 to 53 often-related companies – most of it after 1992, when the mechanism had been eliminated on paper (Informa-tico, May 29 2006; La Nación Online, November 5 1998; November 13 1998).[60] Likewise, this policy allowed for shady inflation of investments – to increase subsidies, accompanied by off-shore trading of shares – to allow for companies to fake the sale of shares to third parties (Informa-tico, May 29 2006).

As part of this neoliberal place-making project, political leaders adapted their progress-oriented discourse to continuously incorporate the rhetoric of sustainability. This in order to tap on its positive national and international connotation to further legitimize their efforts to support foreign investment in the tourist sector and in the self-declared environmentally-friendly high-tech sector as well (UNED-INBio 1994, PND 2007). As a consequence, informed Costa Ricans now feel proud of being the makers of the official Major League baseballs, manufacturers of Intel microprocessors, Hewlett-Packard call-center clerks, brokers of online-gambling deals, and the guests of more of a million and a half tourists a year (see Table 4 below). In fact, fueled by the above-mentioned incentives, the thriving tourist industry has now become the country's second main source of foreign-income,

[60] Even though the incentives legitimated by Article 11 lf Law 6990 are no longer supporting the tourist industry, there remain several other fiscal benefits stipulated under Article 7, including exceptions of paying sales taxes on inputs, construction materials, vehicles and equipment.

closely following high-tech exports, which are dominated by Intel and a few other multinational corporations like Abbott Laboratories (see Table 5 below).[61]

Table 4. Visitors entering Costa Rica and total associated income

Year	1985	1995	2000	2006
Total Visitors (in thousands)	261.5	784.6	1,088	1,716
Revenue Generated (in million $)	118.3	659.6	1,229.2	1,620.8

Source: ODD (2005, p.38), PEN (2007, 399) and ICT (2006).

Table 5. Main sources of foreign exchange (2006)

Product/Service	Income in million US$	Approx % of GDP
Electronic Microstructures	1,831	9.1
Tourism	1,620	7.0
Bananas	623.9	2.7
Textiles	476.9	2.1
Medical Equipment	451.5	1.9
Pineapples	431.4	1.8
Medicines	255.6	1.3
Coffee	227.4	1.0

Source: COMEX (2007a); PEN (2007, p.151); PROCOMER (2007, p.5)

In the case of the tourist industry, fiscal incentives have been often used to develop and build hotels, restaurants and leisure facilities that have caused considerable harm to the country's ecosystems. Such ecological catastrophes have been exacerbated close to the country's coasts, but not exclusively there. A few examples that easily come to mind:

[61] Intel alone accounts for 4.5 percent of the country's GDP (PEN 2007, p.145).

- Construction of 'eco-lodges' inside the Gandoca-Manzanillo Wildlife Refuge – publicly denounced by Anacristina Rossi in her 1992 novel *La Loca de Gandoca* (La Nación Online, January 22 2005).
- Draining and filling of wetlands and further construction of golf courses in Bahia Pochote by the Spanish hotel chain Barceló (Inman et al. 1998, p.28).
- Depletion of aquifers in the semiarid Guanacaste area by uncontrolled construction and allocation of water rights (La Nación, February 3 2008, p.6A).
- Erosion caused by the construction of retirement villas and a deluxe marina in Playa Herradura by the Marriot hotel chain (my own observations) and in the Osa Peninsula by several developers (Lobo-Segura 2007).
- Pollution of ocean and drinking waters around Tamarindo, Jacó, and other popular beach towns in the Pacific coast (La Nación Online, October 21 2007; Jirón 2000).

Nonetheless, it is important to mention that there are also several examples of tourist developments that actively take part in the conservation of nature and responsible social and ecological practices. These will be discussed in detail in Chapters V and VI.

In spite of the ecological contradictions embedded in the expansion of the tourist industry in Costa Rica, the tourism sector grew hand-in-hand with the increasing publicity given to Costa Rica's ecological riches. The country's protected areas, its

flora, fauna, ecosystems, volcanoes, oceans, rivers, etc., have been enthusiastically praised both by independent international magazines – not to mention travel literature – such as National Geographic (January 1983; February 1999) and Time Magazine (January 2 1989), as well as by several international advertising campaigns.[62] These campaigns are paid with funds coming from a three percent tax (of room charges) directly paid by tourists at hotels and a five percent tax on airplane ticket sales (Law 2706 Art.7; Law 1917, Art. 46). As a result, even though the tourist industry in place in Costa Rica has diversified its portfolio to include 'sun and pleasure', luxury spas and megahotels, and even cultural and adventure tourism, practically every tourist guide describes the country as a haven of biodiversity and not seldom, as a tropical paradise. Hence Costa Rica's protected areas continue to be a symbolic metaphor for environmental friendliness that benefits the industry throughout and fuels economic development (Fürst et al. 2005; Inman et al.1998, PEN 2007, pp.197-205). In fact, Costa Rica has now replaced Tanzania as the number one ecotourist destination in the world (Monge-Nájera 2007). Yet simultaneously, practically all major international hotel chains have invested in Costa Rica including Four Seasons, Hilton, Meliá, Barceló, Best Western, and Marriot.

As any other place-making project, the implementation of neoliberal sustainable development is transforming the way Costa Rican society is held together and how it

[62] The Costa Rican Tourism Board (ICT) for example, spent three million dollars to pay for TV advertisement during the inaugural game of the World Cup 2006 alone (La Nación Online, June 1 2006).

relates to the natural environment. Nevertheless, aside from the fact that economic growth and increased quality of life does not effectively trickle-down to the mid and low echelons of society, there is a clear gap between the discourse promoting and legitimizing the place-making project and the reality it attempts to transform. This is so because the alleged goals pursued by this place-making initiative – i.e., sustained economic growth achieved through free-market liberalism and conservation of natural diversity – are mutually exclusive in nature. As has been repeatedly proven in theory and in practice, common property resources, such as biodiversity, forests, prairies, fisheries and clean air, are driven to over exploitation if left unregulated (Fullerton and Stavins 2000, p.4; Hardin 1968; McEvoy 1986, Ch. III-V; Tucker 2000).

Thus, the country now suffers from polluted drinking water sources, poaching, over-exploited rivers and aquifers, degraded soils, very poor solid waste treatment, air-pollution and aesthetic degradation of urban centers (PEN 2007, pp.227-287). By the same token, existing policies and institutions were conceived under static and idealistic perceptions of socioecological dynamics that cannot account for the challenges posed to biodiversity and ecosystems conservation by climate change, introduction of species, fires, land-use changes caused by urbanization and tourism, and by new extractive practices like mining of fossil fuels on and below the ocean floor (Boza 2005; PEN 2006, p.209; PEN 2007, pp.242-6; Pounds 2001; 2006; 2007; Quirós 2008).

Liberal economic growth combined with sustainability policies has increased stress on ecosystems and humans as well. In fact, economic growth has done little or nothing to alleviate the material suffering of the neediest, while also decreasing the number and quality of places available for public recreation and interaction with a healthy natural environment. In addition, this project has efficiently dismantled pre-established channels for distributing the material wealth generated by economic progress among all sectors of society by cutting-back public investment in social security, recreation, education, infrastructure and public safety. Furthermore, neoliberal policies have allowed the country's taxation system to become obsolete, favoring the wealthier, while allowing for tax evasion and fiscal irresponsibility. This situation has rendered the educational, transportation and health systems almost inoperative, leaving the poor (about a fourth of the population), and increasingly the middle classes, at their own expenses. As a consequence, private schools and health-care providers now flourish in the urban areas providing high-cost services that drain resources from the middle classes and help further the material gap between them and the more favored members of society. All combined with underage prostitution, street violence, class-based spatial segregation, urban sprawl, decaying public hospitals, schools and roads.

As will be discussed in detail in Chapter V, the neoliberal project ultimately seeks to reduce nature, social relations and meaning into economic value. Therefore it blurs the mutually constitutive character of these realms. Hence in order to effectively

legitimate this simplification of reality, the neoliberal project restricts places to very simplistic productive and commercial purposes. In Costa Rica, this has meant the production of a fragmented 'sustainable' landscape dotted with very specialized places:

- Protected areas and eco-lodges that sell tropical nature to ecotourists
- Five-star beach resorts that sell relaxation to jet-setters
- Surfing enclaves and canopy tours for the adventurous
- Casinos that sell entertainment
- Industrial free-zones that recruit cheap labor and produce state-of-the-art technology
- Commercial centers that protect consumers from thieves and tropical weather
- Private schools, residential communities, state-of-the-art hospitals, cemeteries and country clubs that offer the well-to-do the opportunity to live disconnected from the rest of the Costa Rican reality

By the same token, given the spatial fix upon which capital depends to reproduce itself, all these places imply and require for their existence places that are generally fenced off from the view of tourists, investors and well-to-do Costa Ricans: slums, poverty-ridden rural areas, polluted rivers, dirty beaches and dumpsters, eroded pastures, deforested hills and places of struggle for access to land, drinking water and food. This spatial fix exists because as demonstrated in theory and in practice by Harvey (2000, pp.23-31), Mitchell (2003), Morgan and Sayer (1988) and Smith (1984), sharp spatial segregation and uneven geographic differentiation are implicit to

capitalism, in general, and to neoliberal development specifically, shaping the intrinsic nature of the transformations currently taking place in Costa Rica and elsewhere.

In sum, the geographic transformation of the country serves the instrumental goal of blurring from the public view the 'other' Costa Rican reality, which is not attractive to well-to-do Costa Ricans, tourists and investors and is thus kept hidden by a network of segregated places. Such a fragmented and idealized landscape dominated by places meant to produce or sell something alienates policy makers, tourists and the most privileged Costa Ricans from the consequences of the actions associated with the sustainable development, neoliberal place-making project. As discussed in Chapter II, this alienation promotes continued unreflexive practices, rather than compelling Costa Ricans (tourists and foreign investors) to engage in intrinsic debates that question the desirability of pursuing the goals implied by this place-making agenda. In spite of this, there has been continued and lively, if repressed, reflection upon the desirability of embracing neoliberal political-economic agendas. Nevertheless the sustainability element of the neoliberal place-making project, and its implications, has rarely been a topic of discussion among politicians, intellectuals, and lay-persons.

This is so, because the laws, places and institutions created in Costa Rica before the advent of sustainable development became to be praised worldwide for their potential

to achieve the goals set by the sustainable development. Given this institutional compatibility and the deceiving but mutually reinforcing goals of nature conservation and neoliberalism synthesized in the idea of sustainable development, this concept was fully embraced in Costa Rica as an important legitimation of the country's neoliberal place-making agenda.[63] Within this context the country's protected areas became emblematic as symbols of progress in meeting sustainability objectives. In addition, related achievements, such as the practices promoted by the National Institute of Biodiversity (INBio) and the explosion of ecotourism have been advertised as unquestionable signs of progress, thusly reinforcing the assumed desirability of the sustainable development motto.

Still, these observations are not to be taken as rejections of the existing attempts to promote conservation policies in Costa Rica. Rather, intrinsic geographic judgment reveals that conserving biodiversity is actually better than not conserving it and that in fact biodiversity and habitat conservation contribute towards making Costa Rica a better place. However, it also reveals that the kinds of biophysical processes, habitats, landscapes and life to be conserved need to be as diverse as possible and that they need to be made effectively available to all of us. In addition, it reminds us that human suffering, alienation and sharp spatial segregation are obstacles against pluralistic and responsible participation in the making of a national place. Furthermore, it clarifies us that the morally ambivalent landscape created by

[63] Though important, the legitimation provided by the sustainability discourse has not been as overt as the one provided by economic growth fueled by neoliberal political-economic policies.

neoliberal sustainable development cannot be navigated within an instrumental discussion based on self-interest and power struggles. Instead, this ambivalence needs to be mapped with the help of nonrelativistic moral frameworks like the geographic one articulated in Chapter III.

In tune with this imperative, Chapter V seeks to be a contribution in stirring public debate in this direction. In doing so it will also help envision alternatives for progress that effectively take common, yet open-ended, notions of what is good and desirable as their goals. Thus, expanding the realm of the possible beyond what is dictated by dogmatic ideological stands and beyond uncritical assumptions about how we ought to be transforming the Costa Rican territory.

V. THE MORAL GEOGRAPHY OF SUSTAINABLE DEVELOPMENT

The 'greening' of Costa Rica's place-making process has only incorporated the radical environmentalist critique to modern society and its relationship with nature in a superficial way. Hence place-transformation policies in the context of sustainable development are still relying (and legitimating) unrealistic notions that conceive separate, contesting realities for nature and society. On the one hand the environmentalists' premise that economic development *per se* is a threat to the natural endowment of the country and hence it has to be kept out of as much land as possible has had long-lasting effects on the country's spatial arrangements. On the other hand neoliberal market-based environmentalism continues to cripple real cultural change in ways that would facilitate the development of a truly ecologically-responsible society.

As a consequence, Costa Ricans are still learning, the hard way, that environmental degradation is a problem that attains all aspects of society and cannot be solved with simplistic recipes. Nevertheless, simplistic beliefs have permeated the public imagination, shaping the existing network of places, the rules that regulate it and the notions that legitimate it and inspire our understandings of what is desirable and good for the Costa Rican place. Thus debates around the needed improvements in the way Costa Ricans' interact with nature and make a living out of this interaction generally remain instrumental and tend to respond to ideas generated either by narrow-minded green absolutism or market dogmatism.

In spite of these extreme tendencies there have been several social movements that have insisted on a need for a midway between both extremes with the objective of securing a more just society.[64] As reviewed in Chapter II, calls for such an agenda emphasize options such as organic agricultural production, socially and environmentally responsible industrialization, nonexploitative uses of forest products, fair-trade practices, commercialization of nature that respects indigenous knowledge, traditional practices and the natural environment, and prioritization of agricultural production for local consumption, among others. Although such ideas are indeed laudable, they need to be accompanied by a concrete elaboration of the actual geographic transformations required for them to take place. As discussed by Sayer (2007, p.157) social critique needs to be concrete and specific about the geographic implications of its arguments to be effective in transforming the world in desirable ways. Nevertheless, in order to envision alternatives for altering the existing reality for the better, we first need to lay out the way the reality at hand – sustainable development – actually works, what are its assumptions and its moral implications as revealed by the lenses of geography.

As stated in Chapter IV, the transformation of Costa Rica according to sustainable development precepts has required the making of specialized places devoted to very exclusive activities and uses. Even though this system of places could not function

[64] This was the case of most social organizations that articulated the political movement that opposed the participation of Costa Rica in the Central American Free Trade Agreement and obtained 48.4 percent of valid votes in the national referendum of October 7th 2007.

without the existence of places devoted to a great diversity of purposes this dissertation cannot cover every single place and its uses in the country. Rather, it focuses on places and policies devoted to save, know and use nature in sustainable ways. Or better put, places that help preserve as much natural diversity in order to be transformed by human beings as a source of income either directly, as tradable goods, or indirectly through the commercialization of services associated with its nonextractive utilization. Still, it is not the purpose of this chapter to study the totality of places that are instrumental in furthering these goals. Rather, it should be taken as an attempt (and invitation) to reflect upon the geographic nature of Costa Rica's development model. Along the same lines, it is also an effort to clarify and map the contending values and attitudes that legitimize and shape this place-making process and its consequences, while also revealing how Costa Rican society's notions of the good and desirable are influenced by todays national and international socioecological processes of change.

As we learned in Chapter III, places can only function in context and in relationship to other places. In addition, most places have more than one purpose and in many occasions uses overlap in one single place. Thus for a system of places to be instrumental in furthering a development agenda, it needs to be articulated by a coherent set of rules (a legal framework) that responds to the geographical imagination – both moral and empirical – that inspires such an agenda.

Echoing these theoretical premises the implementation of the sustainable development model in Costa Rica has been accompanied by an increasingly complex and sophisticated legal framework. This framework explicitly seeks to regulate the country's territorial organization using in-and-out-of-place rules that reinforce the goals of environmental sustainability and market-based growth.

Therefore, Chapter IV of the *Ley Orgánica Ambiental* (LOA) (Organic Law of the Environment) acknowledges the inherent need for a territorial organization that is in tune with the sustainable development goals promoted by the state. [65] In fact, article 28 of the LOA speaks very clearly about territorial-organization policies and their role in regulating society's relationship to its environment (personal translation):

> "It is a function of the State, the municipalities and other public entities, to define and execute national policies of territorial organization, focused on regulating and promoting human settlements and social and economic activities, as well as the physical-spatial development with the goal of reaching a harmonious relationship between the greater good of the population, the use of natural resources and the conservation of the environment."[66]

Specifically emphasizing its role in promoting sustainable development, article 29 of the LOA establishes the following objectives for territorial organization policies:

a) "To locate in an optimal way within the national territory the productive activities, human settlements, recreational and public use zones,

[65] As a response to extreme difficulties in navigating the Costa Rican environmental legislation, the Costa Rican congress passed the LOA with the purpose of consolidating under one legal umbrella (or fundamental statute) the most relevant jurisdiction in the field, in 1995. For thorough analyses of the Costa Rican environmental legislation and its practical effectiveness see for example Cabrera-Medaglia (2005) and Meoño (2003).

[66] All quotes from Costa Rican legislation provided hereafter were originally written in Spanish. Translations and their shortcomings are mine.

communication and transportation networks, wildlife areas, and other vital infrastructure like energetic units and irrigation districts."

b) "To serve as guide for the sustainable use of the elements of the environment."
c) "To balance out the sustainable development of the different regions of the country."
d) "To promote the active participation of individual citizens and organized society in the elaboration and execution of the territorial organization plans and the urban regulatory plans, in order to achieve the sustainable use of natural resources."

Finally, article 30 provides general criteria to be considered when defining the country's territorial organization that are much in tune with sustainability-minded policies:

a) "Respect for cultural, historic and social traits of the human populations involved and of their actual distribution on the territory."
b) "Demographic trends and natural resource use projections."
c) "The characteristics of each ecosystem."
d) "Renewable and non-renewable resources, prevailing economic activities, land-use potential, land-use zoning according to agricultural products and activities, in respect to specific ecological and productive characteristics."
e) "The impact of human activities and natural phenomena on the environment."
f) "The need for equilibrium between human settlements and environmental conditions."
g) "The diversity of the landscape."
h) "The existing infrastructure."

In spite of its discursive coherence, the LOA only goes as far as establishing general social and ecological criteria to be followed by a national territorial organization policy that would ideally be instrumental in promoting sustainable development. As a consequence, these criteria have for the most part remained on paper. This problem is in fact recognized by the state itself in the *Plan Nacional de Desarrollo* (National Development Plan) (PND) for 2006-2010, published in 2007. This document highlights the absence of a national policy for territorial organization that clearly

articulates the country's development goals as entailed by several national laws and highlights the pressing need for a National Plan for Urban Development (PND 2007, p.29, 83).[67] Geographically this means, that there is a generalized notion among government officials, and other observers (PEN 2007, p.229) that the country's national development policies are not being effectively supported by the existing network of places – territorial organization, as generally referred to in development literature.

Nevertheless, in spite of the mismatch between existing place-making efforts and manifested development goals, alternative voices believe that the existing legislation clearly stipulates the necessary guidelines for a territorial organization. Meoño (2003, p.49) for example argues that if the rules stipulated in the existing legislation are followed and enforced by coherent regional and local territorial policies, the huge divergence between paper and practice should not exist.

Along these lines, it can be argued that the country's relative instrumental progress in achieving its self-imposed sustainable development goals goes hand in hand with its relative progress to institute a system of places that has helped achieve them. Thus the country's emergence as a model of green development can be explained mainly by its

[67] Among these laws we find the Organic Law of the Environment, the *Ley de Planificación Urbana* (LPU) (Urban Planning Law), the *Plan Nacional de Desarrollo* (PND) (National Development Plan), the *Ley de la Zona Marítimo Terrestre y su Reglamento* (LZMT) (Law of the Maritime-Terrestrial Zone) and the Municipal Regulatory Plans.

success in creating a system of places instrumental in enhancing efforts towards saving, knowing and using the diversity of nature in a sustainable ways. Protected areas, research and outreach institutions, and eco-friendly commercial ventures such as eco-lodges and canopy-tours clearly embody and reproduce the values that legitimate the sustainable development paradigm in Costa Rica and elsewhere. As will be further elaborated below, protected areas actively conserve and use nature; universities and research oriented institutions such as INBio and the University of Costa Rica actively generate knowledge about nature, its potential uses and the conditions needed to save it; and tourist-related services, productive activities, the state, research and educational institutions (among many others) are actively engaged in using it.

As a consequence these 'sustainable places' have been used by politicians, academic researchers, nature-conservation and green entrepreneurs as effective instruments in creating an image of environmental stewardship for the country as a whole (Arias 2008, Castro 2006, Evans 1997, Rodríguez 2006). However, the efficacy of these places in improving environmental quality and ecological sustainability in the territory as a whole, as well as quality of life and material well-being of the entire population has been questioned by many different actors including journalists (Cisneros and Sánchez 2008), the people's ombuds(wo)man (Quesada-Tristán 2006a; 2006b), political parties (PAC 2005), academics (PEN 2006, p.209; PEN 2007, p.229), and several civil organizations like the Costa Rican Federation for the Conservation of the

Environment (FECON), the Costa Rican Organic Agriculture Movement (MAOCO) and the Marine Turtle Restoration Program (PRETOMA).

These two contrasting takes on the outcomes of the Costa Rican sustainable development model are informed and shaped by contending views of reality, which use different parameters to measure how well does society is changing in ways that resemble what they consider good and desirable. Indeed, this debate has not taken those notions of the good and desirable as its object, but rather has focused on instrumental questions about what policy outcomes to emphasize. Therefore, it is not a coincidence that there are differing opinions about whether or not the country has made progress in both social and environmental terms.

The collision of these worldviews has given way to a set of controversies about how to best rule and manage the resources and institutions made available and conserved by the on-going transformation of the country. Specifically, this ideological split has raised public discussion on a menagerie of issues pertaining natural resources governance and use – i.e. environmental policies (PEN 2006, pp.205-7; PEN 2007, pp.239-41). These can be grouped as relevant to three interrelated questions:

1. What should be saved/conserved?
2. Who should have access to and control of places that conserve natural resources?

3. Who should have access to and control of knowledge generated about those places, their resources and their associated intellectual and material benefits?

The policy outcomes that have emerged (and are emerging) as responses to those pressing questions have shaped (and are shaping) the way Costa Rican society relates to the natural environment. By the same token, the differing answers offered as replies to these questions are mutually reinforced by differing positions regarding the appropriate purpose and character of an efficient national territorial organization policy. As a result, whatever decisions are made regarding the use, regulation, management and conservation of natural resources, they influence directly or indirectly all aspects of the country's social organization. Hence legal and even physical struggle over the practical application of such policies is not uncommon. According to PEN (2006, pp.205-7; 2007, pp.239-41), the most visible conflicts in the last two years are the ones pertaining restrictions to public access and illegal occupation of beaches and the quarrels over poor management of solid waste in several municipalities. Issues regarding control of drinking-water sources and pollution of public water bodies have also been common-place.

As discussed in chapter III and explained by Sack (2001b, p.120), places not only help weave together empirical elements of reality – nature, meaning and social relations, but also corresponding elements from the moral realms of truth, justice and the natural. Therefore, political controversy and struggle over the appropriate spatial

organization of the country and the environmental policies it supports is informed by (often undisclosed) answers to the 3 normative questions outlined above. These answers involve particular understandings of what elements of reality fall within the natural realm and thus are perceived as worthy objects of conservation policies; beliefs about what constitutes social and environmental justice; and ideas about what should be the just and correct means to distribute (and measure) the material and intellectual benefits associated with natural resources use. Nevertheless, the fact that national policies are shaped by notions of what is morally desirable – natural, just and true – is often masked by the instrumental character of the debates that shape them. Hence, the following sections will unpack the moral frameworks behind such contending place-making agendas in order to promote an intrinsic public engagement with their implications that should reveal previously masked alternatives for progress.

Va. The Green Moral Critique and its Intrinsic Implications

As explained by Worster (1993, p.142-4) and Adams (2001, pp.72-3) , sustainable development grew out of the combination of both the environmentalist and the free-market conceptions of society and relies on the observation that societies need to conserve nature in order to know and use it for the furthering of human well-being (Zeledón 2000, pp.19-20).[68]

[68] As we will learn below the notions of what is human well-being, what is just and what is democratic are virtues that rely on particular moral frameworks.

As such the concept of sustainable development emphasizes efforts oriented towards preventing the irreparable destruction of nature caused by human-led activities. Also, this conception implies an understanding of human-environment relations that assigns human beings both a role in destroying and in preserving nature. In addition, this paradigm also sees nature from a utilitarian perspective, where nature can only be conserved if its value in supporting and enhancing human life is understood (and profited upon) by humans themselves. It recognizes the need for promoting a scientific understanding of nature and its instrumental potential for human beings. As a consequence, the conservation of nature within the sustainable development ideal cannot be understood as a value, separate from the modernist, liberal ideal of human progress, quality-of-life and human equity. That is, the sustainability paradigm embodies both the virtue of preserving the gifts of nature for future generations and the virtue of enhancing human life everywhere (development).[69]

These virtues are an essential part of the place-making project in question and require a particular geography of conservation to actively reproduce them through space and time. Under this world view, the elements of the realm of nature to be conserved are those that are directly or indirectly instrumental in sustaining biodiversity and making it available for human knowledge and use. However, this utilitarian perspective on nature-society relationships however, has not been the only one shaping place-

[69]For a thorough elaboration on how the concept of development is permeated by modernist, western ideas of human progress, and its consequences, see Escobar (1995) and Sachs (1992).

transformations in the country. In fact, such perspectives have oscillated through time from emphasizing ecologists' claims for the preservation of nature in a pristine, dehumanized state, to emphasizing market-environmentalists' rationalizations of nature as tradable goods and services.

During its earlier stages (1960-1980) national environmental policy was mainly shaped by environmentalists' pressures to stop rampant deforestation and agricultural expansion to prevent associated habitat losses, and natural resource degradation. This diverse group was mainly composed by young biologists and forest managers, but also counted with the support of international scholars and activists that maintained an interest in the country's natural richness (see Chapter IV). Together they offered a stark critique to the blatant and on-going destruction of the country's natural resources – particularly forests – and in doing so they also questioned the priorities and values that should guide Costa Rica's development process. Thanks to their efforts deforestation was slowed down and the country gave its first steps towards developing a national culture of environmental responsibility.

Even though green activist groups like the Costa Rican Association for the Conservation of Nature (ASCONA) were themselves very diverse in their philosophical inspirations, it would be safe to say that their critique to society was informed by the agendas and values of existing green movements around the world. Those groups promoted a moral framework that considered that human activities

should hold the preservation of the natural (nonhuman) world as its greatest priority. Therefore the morally desirable goal of development and human progress should be to facilitate lifestyles in harmony with nature, rather than rampant materialism and economic growth. Nevertheless, in a country dominated by a growth-centered political-economic and educational culture, the only way to further the green-centered agenda was to envision a territorial organization of the country that effectively banned productive activities from as much land as possible.

The need to follow the path marked by this ecologically centered critique was further validated by newer ecological threats such as the attempt to build an intercontinental oil pipeline across the country and the sprawl of extractive practices, such as squatter settlements, timber and gold mining, in the Osa Peninsula (Pacheco 2007). As a result, the 1960s and 1970s saw the advent of the first protected areas in the country (Cabo Blanco Natural Reserve, Volcan Poás and Corcovado National Park, Santa Rosa and Cahuita National Monuments, among others), which helped protect and recuperate as many disturbed and undisturbed habitats as possible from the threats of agriculture-related deforestation.

Hence, after much political struggle, an ecologically centered ethic managed to partially impose itself in the form of the newly created protected areas**,** which were in turn fully institutionalized with the creation of the National Park System, included in the *Ley de Parques Nacionales* #6084 (National Parks Law, LPN) of 1977. The

values informing conservationists' efforts to protect the country's natural diversity from human-led destruction are clearly reflected in this law. Articles 8 through 13 for example, were very explicit in banning productive and commercial activities from national parks, as well as poaching (of both plants and animals), fishing, any kind of agriculture and cattle grazing, the extraction of rocks and shells, turtle eggs, and governmental concessions for the extraction of any products from parks.

Thus, it is not a surprise that the moral values informing the creation of these places around the country did not go uncontested once they were put in place. Indeed, ecologically centered notions of what should be the right place for nonhuman nature and society were contested by many different groups. They were challenged by peasants and indigenous groups that inhabited many of the lands that were to become national parks and biological reserves; by government officials who did not see a political value in creating these places; and by cattle ranchers and agricultural/timber entrepreneurs who saw their revenues cut down and their practices ruled out of place (Evans 1997, pp.72-93; Hilje et al., pp.163-170). To be sure, this resistance to accept imposed conceptions of how humans should relate to the natural environment within and around certain places has often taken the shape of violent struggle. In the 1970s for example, it managed to take the life of conservation pioneer – Olof Wessberg, who was murdered (apparently by a local squatter-settler) as he tried to negotiate the evacuation of farms from lands in what was soon to become the world famous Corcovado National Park (Evans op cit., p. 98; Hilje et al. op cit., pp.163-170).

In spite of such intense resistance, the system of protected areas grew in size and effectiveness in protecting wildlife, mainly supported by increasing international aid in the form of volunteer labor and financial support. Likewise it managed to diversify the types of ecosystems it protected through the creation of new conservation areas and the promotion of a diversity of management schemes. These categories for managing protected areas held as its most important objective the conservation of drinking water sources, biological and ecosystemic diversity from destruction, alongside the advancement of scientific research (Article 35, Organic Law of the Environment).

Indeed, this expansionary process was almost exclusively driven and managed by national and international biologists/foresters, and conservation organizations that advised them. As a result, the process was mainly informed by ecological notions of the good and the desirable. Article 3 of the National Parks Law (LPN), for example, explicitly states that the National Parks System would be under the direction of a professional biologist, dasonomist (forester) or "any other professional specialized in national parks". Even though the LPN in its articles 4 and 5 created an advising committee to orient the creation, development and conservation of national parks, which included the Ministers of Culture, Education, Environment and a representative of the Tourism Board, this committee never actually functioned. As a result decisions about the creation and management of Parks were generally made by the director of national parks, the minister of agriculture and the president of the country himself (Evans 1997, pp.72-139).

Thus, in practice, early conservation efforts conducted in Costa Rica as a result of the creation of the National Parks System focused mainly on the elimination of poaching and agricultural practices that degraded ecosystems within national parks. Although important for its role in preserving the habitat and ecological niches that support thousands of life-forms that could have otherwise gone extinct, this effort has traditionally overlooked natural resources and ecosystems that remain outside of protected areas. Even though the National Parks Law implies that parks were to be managed in ways that would allocate the needs of friendly visitors, and also serve as the hub for extension activities and environmental education, the precise role that parks would play in improving the relationship between society and the natural environment was not made explicit in the text of the law.

In the long run, the territorial organization of the country has emphasized a view of reality that artificially separates nature and society through the creation of either natural or non-natural, sustainable and unsustainable places. That means, the system of protected areas that has evolved since 1977 has reinforced the assumption that nature exists and is conserved within sanctioned 'natural sanctuaries'; whereas nature is absent of sanctioned man-made environments, i.e. urban areas and their waters, air, flora and fauna, whose ecological degradation is morally tolerated.

In spite of (or perhaps, because of) the negative consequences associated with such an artificially purified reality, the emergence of Costa Rica's system of protected

areas (ASPs) gave way to increased national and international interest. Since the 1980's and increasingly more so since the 1990's, both pleasure-seeking and academic tourists have visited Costa Rica in part to experience first-hand the biological riches encompassed within ASPs and their surroundings. As discussed in Chapter IV, the number of foreign tourists increased from about 250 thousand in 1985 to about 1.7 million in 2006. This has given way to a sprawl of infrastructure devoted to attend to those visitors and tap on the dollars they bring into the country, about 1.6 billion two years ago.

Within the sustainability paradigm, this tourist boom represented a new (and very important) market-niche that implied an expansion of the instrumental objectives of protected areas to include also the generation of revenue to sustain its operations. This gave way to increased tensions between green-centered and market-centered technocrats regarding the values and associated priorities that should inform Costa Rica's nature-conservation rationale. As a consequence of this struggle, the role of the natural realm, the public protected areas and their surroundings within the country's place-making effort was reconsidered in order to acknowledge their potential as important instruments to further the conservation of natural diversity but also as propellers of economic growth.

Vb. A Market-Centered Moral Turn

This sudden possibility for profit-generation associated with the conservation of nature fits well to the free-market ideology that has so much shaped Costa Rican place-making policies ever since the early 1980's. This combination gave way to a so-called free-market environmentalism, which Adams (2001) eloquently characterized as the underlying agenda behind sustainable development (see Chapter IV). Market- environmentalism or *ambientalismo de mercado*, as it is normally referred to in Spanish, has been propelled by the increased political influence of economists, natural resource managers, trade experts and other technocrats that hold it simultaneously as their policy-making and moral framework. Furthermore, their influence in the country has continued to expand as they have access to (and manage) funds coming from international funding institutions that support this ideology and take it as instrumental in furthering their own goals. These include several European governments and their development and cooperation bureaus, the World Bank, the Global Environmental Facility, and the Interamerican Development Bank, as well as NGO's, such as The Nature Conservancy, Conservation International, which together donated an estimate of US$ 380 million between 1986 and 2003 in aid for development in the 'environmental' sector alone (Hernández-Mora 2003, pp.247-262).

The market-centered conservation model is based on the assumption that the moral realm of the 'natural' can be reduced to what we have come to call 'natural

resources'. That means the realm of the natural consists of a set of goods and potential services that may or may not have a utilitarian value to us. As a consequence, nature in form of its goods and services is tradable just as any other commodity like synthetic plastic or the services of a physician. From this vantage point, it is only worthwhile to preserve from extractive exploitation those natural resources whose nonextractive value is of greater magnitude than its extractive one. Moreover, such a quantitative balance can only be calculated using a monetary value or a symbolic equivalent. Thus, place-making policies that follow such a rationale, generally discern about which places can exist and which ones cannot, based on the monetary value of the resources (natural and human) they can sustain. Hence, as expressed by former Minister of Environment and Energy Carlos Manuel Rodríguez (2007, personal transcription and translation):

> "in order to convince policy-makers that it is worth investing in the conservation, maintenance and development of national parks, we [conservationists] have to convince them that they [parks] are worth it in economic terms. [That means] if we don't use their language we won't have a chance to be heard."

As a matter of fact, Rodríguez was talking about his own experience trying to get the *Ministro de Hacienda* (Costa Rica's equivalent to the Secretary of the Treasure) to sign a multimillion dollar loan-contract with an international funding agency in order to fund a payments for environmental services program (discussed below). In order to convince his colleague at the head of the Treasury, Rodríguez relied on a study conducted by researchers (environmental economists) from the National University (UNA) that estimated the direct financial contributions of the national parks and

biological reserves to the country's economy. It turns out that with this document in his hand, Mr. Rodriguez was able to prove that those protected areas generated to the country a conservative estimate of about $815 million a year (2002 dollars), about 5.5 percent of the country's gross domestic product in that year (Fürst et al. 2005, p.31-33).

Even though this is already a very large and significant figure, Fürst et al.'s quantification of the direct economic contribution of national parks and biological reserves includes only revenue generated from the following activities: a) ecologically oriented tourism and related services such as room and board, transportation, visits to cultural attractions; b) services for maintaining the hydrologic cycle for hydropower generation; c) fixed government expenditures and investments in the management and conservation of protected areas; d) revenue generated by bioprospecting contracts and contributions from INBio to the management of protected areas; e) revenue generated from visitation to protected areas (entrance fees); f) salaries paid to 395 employees; g) purchases of lands for the expansion of existing or new protected areas; and h) payments for environmental services to protected areas. Hence, it is valid to affirm that if other harder-to-quantify contributions were considered, the role of protected areas in supporting the country's economy would be further valued.

But setting accounting issues aside, Minister Rodriguez's statement represents a milepost in the history of nature conservation in the country. It makes public a secret that most Costa Rican's know but few are willing to recognize: In Costa Rica, the ecologist's critique to society has never been truly incorporated into our national culture and nature conservation continues to be valued mainly for its potential utilitarian contributions. Mario Boza – the Costa Rican conservation pioneer – puts this truism very clearly as part of his justification for the need of a new National Park's Law that would, for all practical terms privatize, the country's protected areas (ASPs) (Boza 2005, p.2; underline added, personal translation):

> "As it is, the system [ASPs] has problems, among others, problems to stop poaching, to stop anthropogenic fires and problems to pay for unpaid lands. Also, we have documented the poaching of jaguars and wild hogs in Parque Nacional Corcovado and the killing of sharks for their dorsal fins around Parque Nacional Isla del Coco. Nonetheless, there are even more serious problems than these traditional threats, such as competition for lands by agribusinesses, massive use of pesticides, climate change, accelerated industrialization, and the lack of public interest for the conservation of the natural patrimony…"

Indeed, wilting public interest in the conservation of Costa Rica's natural diversity has paved the way for a new market-based conservation ethics that has successfully pushed ecologists' intrinsic critique of materialist society to the backstage. Thus, it is not a surprise that such a rationale has been adopted even by one of the country's leading conservationists during the 1970s and 80s like Mr. Mario Boza. In the words of biologist and conservation pioneer Freddy Pacheco (2007a, personal transcription and translation):

> "the times when the environmental movement was about love for nature and disinterested efforts to conserve it, are gone…The environmental sector is now like any other public sector in Costa Rica, it is the arena for struggle of private interests [national and international], corruption and clientelism."

Of course, this is not to say that the wave of market-environmentalism has gone uncontested, but it is definitely very telling of what precisely are the prevalent moral values in place in Costa Rica as this dissertation is written. This contradiction between appearance, Costa Rica as a green republic and prime ecotourist destination, and Costa Rica as an indifferent land of poachers and polluting agribusiness, hotels and industrial facilities is simultaneously a cause and a consequence of the spatial fragmentation and specialization of places inherent to our current territorial organization. Ecotourism can only take place if we segregate polluted places from clean 'natural' ones, and wasteful economic growth can only take place if we have space for disposing its waste.

The market-based approach to find a solution to the problems associated with this spatial fix is precisely to create more markets. According to this view, what we need is neither a change in moral values, nor effective command-and-control measures, what we need is more markets for environmental goods and services, so that there are market-based incentives to conserve nature and generate wealth in cleaner ways. Geographically this means there is a demand for more specialized places that help include the realm of nature and its conservation into the realm of the market and its profit-generation potential. Hence the country is being transformed into a system of

places where market rules and commercial activities are increasingly intertwined with the ecology and practice of conservation.

Given the financial viability of public protected areas revealed by Adamson (2006), Fürst et al. (2004, 2005) and Inman et al. (1998), state-owned protected places can now justify their existence as key players within a neoliberal sustainable development model. Thus, they are on their way of being fully assimilated into this paradigm, which trusts market-based policies to sustain the conservation of nature and the material flourishing of a country. As part of this transformation, the geography of conservation in Costa Rica is increasingly shaped by market-based 'conservation-and-development' mechanisms and neoliberal political ideals. These include payments for environmental services, ecotourism and bioprospecting, and values such as democratic governance, decentralization and a business-oriented mentality, which are in turn increasingly transforming the public protected areas as well.

In light of this new market-based environmental agenda, the virtues and goals pursued by Costa Rica's place-making efforts to pursue the conservation of nature have also changed. Albeit biologists and environmental scientists continue to have a say as for how protected areas are managed, their views on nature conservation are being increasingly overtaken by approaches dictated by classical-economic criteria.

In tune with these ideas, starting in 1995 the Ministry of Environment (MINAE) began a transformation process of its conservation-minded institutions with the objective of consolidating all the state-owned protected areas under one administrative body, the *Sistema Nacional de Áreas de Conservación* (National System of Conservation Areas, SINAC). Before the emergence of SINAC, management of protected areas (ASPs) was distributed among three different bodies, the System of National Parks – responsible for national parks and biological reserves, the General Forestry Directorate – in charge of protection areas and forestry reserves, and the Wildlife Directorate – in control of wildlife refugees. With this change the Ministry of Environment sought to develop a more integrated institutional framework to more effectively articulate conservation policies nationwide. After several executive decrees and much political lobbying, SINAC was officially constituted in the Biodiversity Law of 1998.[70] As stated by Ministry of Environment officials, the creation of SINAC represents "a change of mentality" in the understanding of conservation policies that "truly integrate previously fragmented forestry, wildlife and national park policies" (SINAC 2005, p.5).

The new management strategy that shapes the National System of Conservation Areas' operational goals is informed by a 'philosophical framework' comprised of three objectives: decentralization, deconcentration and democratization.

[70] The Biodiversity Law was enacted to provide a legal framework in tune with the guidelines established by the Convention on Biological Diversity, which was one of the major outcomes of the Rio Conference of 1992 (MINAE 2000, pp.11-13).

Decentralization is inherent to SINAC, as its creation implied a partitioning of the country in 11 administrative units, or so-called 'conservation areas'. According to SINAC's own definition, decentralization meant that the system would seek to progressively transfer decision-making responsibilities as well as operative functions to each conservation area. In order to do so, SINAC had to progressively redistribute and transfer human, technical and financial resources to each conservation area (so-called deconcentration), while also seeking to promote the active and progressive participation of civil society in the management of natural resources (SINAC 2005, p.6).

As discussed in Chapter III, the instrumental legitimation behind decentralization processes like the one embodied by SINAC is based on the assumption that decentralized decision making, or so-called 'local' governance of resources, implies more democratic decision-making and better management of those same resources. However, a closer look at the way politics work in Costa Rica reveals that corruption at the municipal- and protected-area level is an equal or sharper problem than it is at the national level. As stated by PEN(2006, p.207) and PEN (2007, p.240), municipalities are in fact a common denominator of environmental conflict in the country, mainly due to a lack of technical capacity and/or political will to fulfill their responsibilities. This is put in evidence by recently publicized concerns regarding the proliferation of illegal wells in the country (La Nación, February 8 2008, p.4A); pollution of ocean waters by untreated waste-waters dumped illegally by hotels and

other businesses (La Nación Online, October 21 2007; La Nación, February 11 2008, pp.4-5A); and drinking-water scarcity due to uncontrolled urbanization and tourist developments (La Nación, February 3 2008, p.6A). In fact, municipalities are the public institutions facing the greatest number of lawsuits for their poor record as managers of natural resources (PEN 2006, p.207).

In addition, there is also evidence showing that municipal authorities often blatantly overlook environmental regulations to favor commercial developments and even their own interests or those of their friends (La Nación Online, March 8 2007; February 20 2007). Important processes of environmental degradation and illegal development in protected areas have taken place with the approval of local (and national) authorities (La Nación Online, February 19 2007; October 21 2007). Moreover, corruption at the 'local' level also permeates the management of public protected areas as evidenced by newspaper reports that revealed a network of tourist guides, travel agents and SINAC employees engaged in counterfeiting and resale of tickets at Manuel Antonio National Park (Diario Extra, January 22 2008, p.2A). By the same token, local branches of other government institutions such as the public water works company (AyA) have been denounced for granting control of a whole community's water supply to a single company (La Nación Online, March 9 2007; March 10 2007).

Finally, the political forces pursuing decentralization have reproduced those same (unchecked) assumptions about the desirability of decentralized governance of natural

resources in order to pursue the objectives of a market-based environmentalism. Still, decentralization can in some instances help to more effectively develop area-specific policies that better reflect the realities of each conservation area – as is the case of the more efficient allocation of voluntary workers and raw materials (Luis Matarrita pers. comm. June 20 2007). Nevertheless these arguments also mask the fact that decentralization accomplishes two unacknowledged and mutually reinforcing objectives necessary to further the neoliberal agenda: 1) to reduce participation of the central government in the governance of natural resources – in favor of control and influence by local entrepreneurs and often-unregulated NGOs; and 2) to promote market-oriented conservation policies.

Although the first objective is self-explanatory, the second one requires more elaboration. Namely, as established by SINAC, decentralization also requires the transferring of human, technical and financial resources to each conservation area in order to promote their autonomy within the system. Although coherent with a decentralization strategy, such an effort would require that SINAC establishes criteria for deciding how it is going to distribute those resources. Shall each protected area receive according to its size, to the number of visitors it receives, or rather according to the number of species it protects, or the monetary revenue it produces? As will be discussed later on in greater detail, within the free-market milieu in place in Costa Rica, chances are that the distribution of resources is made according to market-based

criteria. That means according to the demand for services and the future potential for revenue-generation at each park.[71]

Such a speculation is confirmed by statements issued by SINAC officials who bluntly affirm: "SINAC's strategy is based on providing quality and efficient customer service" (ibid., p.6). Under this light, it is clear that the objective of SINAC is not really to democratize decision-making in order to improve the governance of protected areas, but rather to run them as efficient and productive environmental businesses. The consequences associated with such a rationale are already evidenced by the way protected areas are being transformed now a days and by existing proposals that seek "to transform the National Parks System in a better managed and more profitable and efficient public service", yet owned by a nongovernmental organization, I add (Boza 2005, p.4, underline added, personal translation).

In line with this argument, Mario Boza's proposal seems to be the natural culmination to the commercialization of Costa Rica's protected areas. Thus, he proposes to transfer all protected areas under SINAC, which are a national patrimony, to the custody of an NGO, in order to avoid a significant number of regulations and filters that control public institutions and their workers (ibid., articles 3, 4 and 35). Furthermore he suggests that the prohibition against commercial activities in national parks be overruled and that parks start profiting from copyrights on their names and

[71] See Adamson (2006a; 2006b) for actual policy recommendations in tune with this goal.

natural beauties such as volcanoes and waterfalls, leasing fees for its resources and properties (ibid., articles 15 and 34).

In addition Boza advocates for an efficient distribution of resources to the parks through a differentiated entrance-fee structure where each protected area would charge as it sees fit according to the quality and demand for its services (article 29), while also allowing for each area to apply for bank loans, to be able to constitute it self as a 'private' entity to accumulate capital, and to participate in joint-ventures and contract out its environmental services both with national and international private and public entities (ibid., articles 20 through 22).

Moreover, Mr. Boza gives us a good idea of what is the market-centered understanding of community involvement as his proposal would constitute a board of directors to rule this new system of protected areas. This board would include only two state-government representatives and at least four representatives from NGO's including a fix seat for a representative of INBio, another for the Costa Rican Chamber of Tourist Entrepreneurs, and another one for so-called 'conservation' NGO's (article 9). Even though this panel would also include a representative of all mayors in the country and a representative of the community development organizations, these representatives would not necessarily be public employees and thus their actions would not necessarily be subject to public accountability.

Finally, Mr. Boza's proposal seeks to establish a single, universal management scheme for the country's protected areas. That means, he proposes to run all protected areas under one set of management criteria, which includes the above-mentioned dispositions (see Transitory Article III). Geographically this means the homogenization of the Costa Rican conservation landscape. Whereas as of 2008 there are 8 management categories with distinct objectives and goals, this proposal seeks to unify them under a single unifying framework. Even though the current management schemes are outdated and out of pace with the current realities of the country and the areas they regulate, they still offer some flexibility to managers and guarantee – at least on paper – a diversity of objectives and purposes. Thus these management criteria need in fact to be revised, yet this revision needs to truly obey a diversity of objectives which goes beyond the neoliberal ideal of making them financially sustainable. Such a degree of uniformity can only make sense to policy makers who in fact hold the transformation of the Costa Rican place into one huge financially sustainable market of goods and services as their ultimate goal.

One place I visited as part of my fieldwork was Poás Volcano National Park. My experience there helps put in place how conservation policies have changed in the last 40 years as they have been influenced both by the moral frameworks dictated by the sciences of ecology and neoclassical economics.

The park, in its modern version, was originally conceived by Mr. Boza as part of an effort to imitate the national park model in place in the United States (Evans 1997, pp.73-4). Therefore, from its beginnings it had a visitor's center with parking lots for cars and buses, an amphitheater and small displays with information about the natural riches housed in the park. There is paved access both to the crater of the volcano that gives its name to the park, and to the visitors center itself. Even though cars are not allowed past the visitor's center, there is a two-lane road (or boulevard as authorities refer to it) that serves as a highway for its more than 270 thousand visitors a year. This park is indeed the most visited one in Costa Rica and the one that generates the largest income (MINAE-SINAC 2006, pp.42-3). Through obscure legal tricks, park authorities have been able to open a souvenir shop, a cafeteria, and an art-gallery to tap on the purses of tourists inspired by scenic beauty of its surrounding cloud forests. Poás Volcano continues to be the most visited park by Costa Ricans as well – about 126 thousand a year (ibid., p.39).

Yet the way Costa Ricans 'use' the park has changed quite a bit. Traditionally, given its close proximity to the Central Valley, where the majority of the urban population lives, the park was an important weekend destination for city dwellers and other neighboring communities. Even before it was officially designated as a national park, the volcano and its surroundings were a symbol for Sunday picnics sprinkled by clean air, mountain mist and beautiful views of cattle pastures, strawberry and blackberry bushes and occasional baths in cold rivers, and why not, in the lagoon formed by an

old inactive crater next to the main active one. Furthermore, on March 19, Saint Joseph's day, the park would see the largest crowds of visitors who would generally hike up the volcano to get a break from the hot March weather down in the valley. Races (biking and running), horseback expeditions and traditional foods would adorn this celebration, which for the most part has disappeared with the elimination of Saint Joseph's Day as a national Holiday – after pressures of businesses for a more modern and efficient calendar.

But the changes do not stop there. After its designation as a national park, Costa Ricans saw some of their traditional uses of the park's territory and its surroundings restricted or even banned. Picnics are now only allowed in certain, not abundant areas, since the majority of the pastures where visitors used to play and lunch have now been designated as 'habitat regeneration plots'. Swimming in the old-crater lagoon is now banned and the number of trails has been restricted to prevent impacts on natural habitats. Moreover, as the park's surroundings have attracted more foreign attention, property value has risen and thus owners have fenced off their properties or established restaurants or lodging facilities. Thus, what used to be open pastures on the skirts of the volcano are now properties surrounded by barbwire that force former picnickers to sit in always increasingly expensive restaurants that now sell the traditional foods they would normally have eaten on the meadows.

Place-transformations continued and sharpened as a consequence of the tourist boom that has 'blessed' Costa Rica for the last 20 years. As a result of this boom, the proportion of national and foreign visitors has shifted and now foreigners represent more than half of the park's guests (MINAE-SINAC 2006, pp.39, 41, 43). Thus on an average week-day the park is colonized by foreigners from all the continents in the world. These tourists seem to have different needs and desires –generally dominated by comfort – than the traditional Costa Rican visitor. Given the new customer-oriented mentality that drives decision-making in the park, park management has decided to pave all the trails in order to facilitate access and reduce maintenance costs (Mauricio Alpízar pers. comm. September 4 2007). This measure is further defended by ecologists who argue that paved trails reduce the impact of humans on the ecosystem by reducing erosion. Aside from nicer trails, tourists also receive a flyer with superficial information about the park and its beauties.

Beyond the important changes occurring in the park as a consequence of increased visitation, we find several transformations in the places that surround the park and completely alter the in place experience of visitors. Namely, foreign tourism has driven up the prices of formal and informal food-services in the surrounding areas. This trend is in turn exacerbated by the fact that property prices have gone up in the area as well as lodging fees and have made it more difficult for Costa Ricans to stay in the area for longer periods of time.

Thus these changes have transformed the way Costa Ricans experience the place where the volcano is located. What used to be a day-long excursion or even a weekend trip has become a matter of a couple of hours: 1) Drive your car for 40 to 60 minutes up the hill into the parking lot; 2) Unload and walk up the paved boulevard to the crater (10 to 20 minutes); 3) take the now-paved trail to the lagoon, see it from a distance (20 minutes); 4) take the 'new' paved trail back to the visitors center (30 minutes), where, if you have the money, you can buy yourself a latte or a moccacino; 5) If you prepared picnic food at all, try to find an empty officially designated picnic spot, if nothing is available, go back to your car and drive down the hill to find a decent not too-expensive place to eat, outside the park. Altogether, depending on your luck in finding a spot for picnicking (if you even try to do that), your sanctioned experience 'in nature' can take as little as an hour and as long as 3 hours (if you stretch it).

In sum the transformations inflicted upon the network of places that constitutes the Poás Volcano National Park have significantly altered the way Costa Ricans experience nature. To paraphrase Leo Marx (cited in Pollan 2006, p.138), what used to be a 'landscape of reconciliation' for society and nature, is now a landscape of self-delusion, where one pays for comfort and convenience in a fast-food-like attempt to enjoy an artificially purified illusion of nature.

Alongside the changes in moral paradigms materialized in Poás National Park and reverberating throughout the country's protected areas, there are other practices/policies directly supported by the government of Costa Rica that clearly embody the ideals of market-environmentalism and have shaped the sustainable development model: payments for environmental services, ecotourism and bioprospecting. Following we proceed to study the values that legitimate their implementation as development instruments, and the intrinsic transformations they inflict in the Costa Rican place.

As explained by Escobar (1995, pp.192-211), the capitalist system that results from free-market political economy relies ultimately on the transformation of nature in raw materials, i.e. natural resources – or simply, the 'capitalization of nature', as he puts it. Nevertheless, the contribution of market-environmentalism in further commodifying nature, lies not only in its sophisticated rationalization of nature as tradable goods with the help of biotechnology, but also in its success in creating markets for the services provided by nature. According to the latest trends in sustainable development literature, nature's services are now referred to as ecosystem services.

This term has been chosen by the Millennium Ecosystem Assessment mentioned in Chapter II (over environmental services) because it is supposed to do a better job encompassing the full array of services we receive from nature. According to this

study, in order to sustain and enhance the quality of life, biodiversity and the ecosystems that support it, we humans need to make efforts to value them to their full extent (World Resources Institute 2005). In view of that, sustainable development is more a matter of accurate value-assessment of resources for their precise valuation – often reduced to better pricing mechanisms – than anything else.

In the concrete example of sustainable development in Costa Rica, special attention has been given to those ecosystem services that support ecotourism, watershed management, carbon sequestration and production of timber. In the case of the latter three services, these are partially acknowledged by the Payments for Environmental Services program (PES) described later in this section. Likewise, in the case of ecotourism, these services are collected in the form of entrance fees paid in protected areas or private reserves. But the systemic commercialization of nature – or biocommerce, as will be further referred to in the text – has two further intrinsic implications that need to be exposed.

First, it is particularly important to highlight the fact that the rationalization of nature into tradable goods and services is not only encouraged as a development tool, but also seen as nondestructive and sustainable in ecological terms. To paraphrase McAffe (1999), this means that we are attaching an economic price to nature in order to save it; or rather, ecotourism and payments for environmental services are helping save nature by selling it. Again this assumption seems to imply that for sake of

sustainability we need to reduce the realm of nature to the realm of the market in order to allow it to exist through time. As revealed by our geographic framework, this is morally not desirable since the three empirical realms – nature, social relations and meanings – are mutually constituted and thus, we cannot reduce one to the other without transforming reality into a duller more monotonous one – constituted solely by market transactions of goods and services. In addition, in empirical terms, it would be counterproductive and not desirable to set all our hopes for conserving nature and enhancing ecosystems as dependent on our capacity to reduce the realm of nature to goods and services.

Secondly, there is a need for responsible discussion and reflection about the ethical implications of the tendency to use scientific knowledge with the purpose of rendering the whole of the natural realm suitable for human use.[72] As revealed by vivid controversies about human abortion, cloning practices, embryonic-cell research, and even bioprospecting, the commodification of nature through state-of-the-art biotechnology is not seen as universally desirable among all groups in society. In fact, from many points of view, some efforts to 'improve' or transform nature to better suit human needs, such as genetic modification of foods, is seen as a denaturalizing process that diminishes our capacity to be aware of the social and ecological consequences of growing our own food.

[72] Noel Castree (2003d) provides an excellent review of the geographic literature on the commodification of nature where he highlights the pressing need to develop normative frameworks that help us navigate its moral consequences.

This concern has been materialized in the 2007 Law for the Advancement, Promotion and Development of Organic Agriculture (No. 8591), which explicitly prohibits and punishes with imprisonment the use of (and research with) genetically modified organisms, or derivatives, in organic farming (Arts. 31 and 33). [73] In addition, this Law goes as far as to call for the official designation of 'Organic Production Zones' wherein the growing of genetically modified organisms is also prohibited, and around which the use of these organisms is restricted by means of physical barriers, buffer zones and management plans to protect organic produce from potential contamination (Art. 22).

Likewise the industrialization of agriculture and food production, through say, confined feeding facilities, are perceived as 'unnatural' and thus immoral ways of treating animals, by many observers. At all costs, sophisticated knowledge of nature ought not to be used to further reinforce reductive frameworks that seek to transform the Earth, and everything within it, into "a giant market/utility company" under the control of a few (Escobar 1995, p.197). Rather they should help develop an

[73] Law 8591 (Article 5) defines organic agriculture as:

> "every agricultural practice or agricultural industry that sustains itself through natural systems to maintain and recuperate soil fertility, biological diversity, and the proper management of the hydrologic resource, and the enhanced biological cycles in the use of soils. This activity discards the use of synthetic agrochemicals, whose toxic effect impacts human health and the environment, as well as the use of transgenic organisms.
> [Organic agriculture], aside from contributing to the environmental equilibrium, fosters a sociocultural equilibrium in the forms of indigenous and peasant communal organization, incorporates traditional knowledge to current practices, and generates just labor relationships and defends people's right to produce healthy foods, prioritizing the use of local resources" (personal translation).

increasingly sophisticated ecological awareness that truly help us understand the consequences of our doings on Earth.

These observations and admonitions shall not be taken as a rejection of every effort that seeks to create a market derived from the gifts nature offers to humans. Rather, they shall be taken as warnings against any place-making agenda that seeks to rely exclusively on such policies by previously imposing a limitless rationalization of nature in a dogmatic way. Intrinsic judgments beckon us away from such moral dogmatism while compelling us to envision policies that seek to make us more aware of the complexity of our reality, including the nature and composition of what falls within the realm of the natural and our just and desirable relationship to it. Having said that, we proceed to study a set of market-based policies, institutions and productive activities that have come to be included in the country's palette of development tools and rely on a conceptualization of nature as comprised of tradable goods and services. As will become clear, they do in fact offer contributions towards informing a relationship with the natural realm that enhances its diversity and complexity, while increasing our awareness of it.

Vb.i. Payments for Environmental Services

Payments for Environmental Services (PES) consist of monetary compensations to landholders that maintain natural forests and/or forest plantations for the environmental services provided by these resources. Although there have been cases

where service transactions take place in the form of voluntary private contracts between a service provider (public or private) and a service receiver (public or private),[74] in Costa Rica PES usually refers to transactions framed under Chapter II of the 1996 Forestry Law #7575 and administered by FONAFIFO, the National Fund for the Financing of Forestry.

Indeed, as a result of a change in political discourse, the PES program managed by FONAFIFO evolved out of a forest protection and reforestation program established in the 1969 Forestry Law. However, this program did not enter into operation until 1979. Ever since then there has been a series of forestry-promotion programs, which have used different forms of incentives to endorse reforestation, and prevent deforestation, around the country. These have included government bonds, and subsidies to commercial and noncommercial timber plantations in the form of property-tax exemptions and subsidized loans (Rojas and Aylward 2003, pp.5-6). Therefore, these programs did not fit the priorities and jargon of market-environmentalists and international funding institutions. These actors preferred the term payments rather than subsidies, since the structural adjustment programs they were advancing precisely required the elimination of government subsidies to private

[74] See for example the contract between the DEL ORO Company, a producer of oranges, and MINAE – in representation of the Guanacaste Conservation Area, where the DEL ORO Company agreed to pay for a number of ecosystem services provided by its neighbor, the Guanacaste Conservation Area. Likewise, we find the case of the PES contract between La Esperanza Hydropower Project (a private hydropower generator) and the Monteverde Conservation League – manager of the Children's Eternal Forest, (Janzen 1999, pp. 5990-4; Rojas and Aylward 2003, pp. 17-9, 31-3). For a thorough review of the outcomes of attempts to establish a diversity of markets for environmental services in Costa Rica, both private and public, see (Rojas Aylward 2003).

activities. As a consequence, the PES program was institutionalized in the 1996 Forestry Law (Articles 22-7) as a more efficient tool in furthering the goals of sustainable development, through direct payments to farmers, combined property with tax exemptions and program-specific logging rights (ibid., pp.6-8).

According to law #7575 (Article 3k), the Costa Rican government recognizes the following environmental services: Mitigation of problems associated with the presence of CO2 in the atmosphere; protection of the hydrologic cycle; conservation of biodiversity; and preservation of scenic landscapes. These services in turn are paid by FONAFIFO according to the land management regimes in place, which can be of four different kinds:

1) Forest protection – refers mainly to the conservation of primary forests.
2) Forest regeneration – refers mainly to pastures left fallow for natural regeneration to occur.
3) Reforestation – refers mainly to commercial timber plantations
4) Agroforestry systems (SAF) – refers combined timber and agricultural plantations.[75]

Table 6 below, shows the number of hectares allowed to be contracted-out under each management scheme and the respective prices paid to landowners by FONAFIFO in 2007.

[75] For a thorough description of regulations and guidelines for the PES program and specific technical restrictions attaining to each management scheme see: MANUAL DE PROCEDIMIENTOS PARA EL PAGO DE SERVICIOS AMBIENTALES, La Gaceta, 13 March 2007, No 51 pp. 1-15; and executive decree 33583-MINAE published in the official newspaper La Gaceta on July 17 2007, No 137 pp. 1-3.

Table 6. PES Management regimes, number of hectares/trees allocated and official compensation rates

PES Management Regime	Number of hectares/trees	Payment per ha./tree
Reforestation	6,000	$816 in 10 years
Natural Regeneration	400	$205
Forest Protection	62,855	$320 in 5 years
Agroforestry System	600,000 (trees)	$1.30 in 3 years

Source: Executive Decree 33583-MINAE, pp.1-2.

Funding for the PES program comes from a tax on fossil fuels and from loans and donations from international institutions such as the World Bank, the Global Environmental Facility, and the German Government. Altogether, external funding accounts for as much as 57 percent of the total budget managed by the PES program in the last 12 years (FONAFIFO 2008).

The PES program has been the object of numerous academic and institutional studies to determine their efficacy in fulfilling its own self-declared goals (Miranda et al. 2003; Miranda et al. 2004; Miranda et al. 2006; Rojas and Aylward 2003; Sánchez-Azofeifa et al. 2007; Sierra and Russman 2006). Rojas and Aylward (2003) provide a thorough analysis of the actual efficiency of the existing PES program as a market-based instrument to provide for the provision of environmental services. Among other questions the authors studied whether or not the PES scheme is skewed towards forests; whether it really establishes financially sustainable free-markets or it is just a 'repackaged' subsidy; and whether it accurately reflects the cost of services. Miranda

et al. (2003; 2004) conducted field surveys to determine the social impacts of the PES program based on a sustainable livelihoods conceptual framework; and Miranda et al. (2006) evaluated the program in its capacity to incorporate nontraditional stakeholders into conservation efforts; while Sierra and Russman (2006) and Sánchez-Azofeifa et al. (2007) evaluated the efficiency of the program in protecting and/or enhancing forest ecosystems.

Although the above-mentioned studies provide great insight into the potential efficacy of PES as development and conservation tools, it is precisely the objective of this chapter to avoid falling in instrumental discussions that ultimately leave unquestioned the very values guiding the use and existence of such policy tools. Nevertheless, the insight offered by these inquiries will naturally be taken into account when formulating our own policy alternatives in Chapter VI.

Still, it is pertinent to highlight that the PES program has successfully taken conservation efforts out of the physical borders of protected areas. Namely, public and private funds are being used to support ecosystems that bridge so-called 'natural' and 'man-made' places, thus contributing to highlight and bring awareness about the intrinsic interdependence between protected and unprotected places and the ecosystems they support. In addition, the program has enhanced the diversity of the Costa Rican network of places, in that it allows for conservation to take place outside of the public protected areas, while also contributing to the sustenance of life

everywhere in the country. Further spatial transformation in this direction is desired in intrinsic geographic terms and echoes the call for increased international and national support in sustaining places that work as biological corridors between protected areas (MINAE-SINAC 1996; PEN 2007, pp.242-6).

In spite of this, it is important to mention that the rationale informing the PES program and the academic efforts to study it rely on two major unchecked principles: First, that land owners in Costa Rica need an economic incentive to abide by forestry legislation that prohibits the change of land-uses from forestry to agriculture or other commercial uses (an assumption that reaffirms Boza's concern for a generalized lack of intrinsic appreciation of the natural patrimony).[76] According to promoters of this doctrine, the high opportunity cost of 'fallow', unproductive land instigates farmers to break the law and thus the focus of the PES program relies exclusively on the provision of monetary compensations for the opportunity cost faced by farmers when not exploiting their lands. Secondly, the PES program has traditionally emphasized forest-exclusive uses of land as worthy of conservation, for they were deemed as the most important suppliers of environmental services and thus multiple-use forest management schemes have been historically ignored. Still, this tendency has recently changed with the slow inclusion of agroforestry systems as a valuable land-management method since 2003.

[76] This prohibition is absolute in some areas like recharge zones, river and lake banks and inside of a 100 meter radius around permanent springs, but can be waived in the case of forested areas not explicitly protected by law, by securing proper governmental authorization after a tedious process (Forestry Law Articles 19-21; 33-37).

Lastly, it is important to note that there remain several unexplored questions regarding the unequal opportunities available to access the benefits associated with this program. This problem has been revealed by existing studies on PES, yet it has not been thoroughly considered as an important factor to assess the desirability of the PES program as a development tool. Indeed, Miranda et al. (2003; 2004) have pointed out that transaction costs – i.e. the economic and legal cost of entering the program – are prohibitively high for poor peasants, for formerly landless squatters who possess limited property rights on their lands, as well as for those who not have formal titling of the lands they work and inhabit (Miranda et al. 2003, pp.47-8). As will be further discussed in section Vc, this trend reminds us that social justice is an important intrinsic aspect to consider given that the PES program is dominated by a market-of-services rationale, which will benefit land owners unevenly according to their capacity to navigate supply and demand forces. But before we can elaborate on this problematic, we have to first discuss how ecotourism and the commercialization of nature have contributed to transform the moral virtues reproduced by the Costa Rican place.

Vb.ii. Ecotourism

Ecotourism is a branch of the tourist business sector that taps on an increased desire (particularly among citizens of wealthy nations) to enjoy nature, its beauty and gifts. Given the accessible prices for air-transportation worldwide, ecotourism has transcended the boundaries of wealthy nations, where hiking, mountain biking and

kayaking, among others, have become popular activities, to reach also tropical nations like Costa Rica. In the context of development, ecotourism has been adopted head-on as a tool for sustainable development. As explained above, this practice legitimates what has been called the commodification of nature – the making of nature and its elements into goods and services – as a valid, desirable instrument for development.

Therefore in Costa Rica, the sustainable development milieu, market-environmentalism and increased revenues generated by the tourist sector provided the moral, economic and political legitimation to launch a national development policy to promote the growth of the tourist industry. As explained in Chapter IV, the rise of ecotourism in Costa Rica has been dominated by contradictions and ambivalences that have permitted tourist developments to cause and coexist with ecological degradation while increasingly depending on the green reputation of the country. Indeed, Table 7 below shows that the number of tourists visiting Costa Rica has increased by 800 percent in the last 20 years, while international visits to the public protected areas has increased by a magnitude close to 1000 percent and now represent more than half of visits to these areas.

Table 7. Visitors to Costa Rica and the public protected areas (ASPs) (counts given in thousands)

	1985	1995	2006
Tourists entering Costa Rica	261.5	784.6	1,716
Foreign visitors to public protected areas	63.4	251.7	646.7
Foreign visitors (as % of total visitors to ASPs)	25.8	41	53.7

Source: PEN (2007, p.405), for 1995-2006 data and ODD (2005, p.38) for 1985 data.

No matter how obvious it is that a green reputation cannot be maintained *ad infinitum* without a reality that supports it, the tourist sector in Costa Rica has been very slow in truly acknowledging their dependence on the gifts offered by nature. Even though it has been argued that a mechanism to acknowledge this dependency does in fact exist – in the form of entrance fees paid by tourists to access the protected areas, this claim relies on the above-criticized notion that the only places where nature exists, and by association, the only places that make available nature's goods and services to humans are protected areas themselves.

Nevertheless, ecotourism (and tourism in general) depends on many other places that deliver important services and goods coming from nature like building materials, drinking water, fertile soils for agriculture, scenic beauty in the form of ocean views, waterfalls, rivers, agricultural landscapes, and wildlife, which in the case of crocodiles, scarlet macaws, quetzals, green parrots and monkeys are more often spotted outside of public protected areas (ASPs) than inside of them. Hence, even

though this issue will be revisited in Chapter VI, herein it is important to emphasize that if market-based policies seek to better – more efficiently – recognize the reliance of ecotourism (and development) on nature's goods and services, they should do a better job in truly acknowledging the social, economic and ecologic costs of these services and goods to include also those that transcend the geographic boundaries of ASPs.

In spite of the negative ecological impacts of countless irresponsible tourist developments propelled by blind material greed, increased interest in Costa Rica's natural attractions has also given way to a great diversity of conservation initiatives that effectively transcend ASPs. Many tourist entrepreneurs have been active in developing private conservation areas. That is the case of Hotel Marenco in the Osa Peninsula, Puntarenas, the Trogon Lodge in San Gerardo de Dota, San José, Hotel Punta Leona in Garabito, Puntarenas, and the La Selva Biological Station in Sarapiquí, Heredia.[77] These businesses have been able to profit from protecting its surrounding ecosystems both by tapping on the government's PES program and by adding value to its portfolio of services to include canopy tours or guided birding- and 'rainforest-at-night' tours. Other examples include venues that have enhanced access to their surroundings by devising new nonextractive uses of nature. That is the case of Tabacón Hot Springs Resort, whose owners modified the course of a naturally heated

[77]Hotel Punta Leona, for example, runs a very successful artificial-nest program for the restoration of the Central Pacific population of endangered scarlet macaws (*ara macao*). La Selva Biological Station in turn receives more than 30,000 user-days of visitors to its 1,600 hectares experimental nature reserve.

river to create pools and waterfalls and transformed the surrounding vegetation into lush tropical gardens. Likewise, the La Paz Waterfall Gardens in Vara Blanca, Heredia constructed elevated hiking trails that provide relatively easy access to otherwise hard to reach waterfalls; it also built a giant butterfly garden, a restaurant with great rainforest views, fishing ponds and hummingbird feeders to attract several varieties of these beautiful birds.

Tourist enterprises, like Hotel Punta Islita in Guanacaste, have also made significant efforts in fostering an environmental culture among its workers and their surrounding communities, as well as helping them improve their quality of life through improved public infrastructure, aesthetic adornment of public spaces and environmental education campaigns. By the same token, others have been able to generate economic income instrumental in improving the quality of life of the communities that host tourists. This is the case of the La Fortuna Waterfalls Park. This tourist attraction is run by the local development association and aside from improving access to a beautiful waterfall and river, it invests the total profits in actively supporting public services around the community.

Given the proliferation of self-declared ecotourist service-providers, as the ones described above, the Costa Rican Tourism Board (ICT) and the Costa Rican Ministry of Tourism, have developed an important initiative that seeks to acknowledge and further so-called ‘sustainable tourism practices’. This is the case of the Certificate of

Sustainable Tourism (CST), which the tourism board is promoting as a way to guarantee customers that the services they are using are environmentally friendly. The CST program is a voluntary certification program that works like the organic agriculture certification programs in the U.S: it defines criteria that if satisfied by businesses qualify them to carry the CST label. According to the goals of the CST program, businesses that gain the right to carry this label should in turn obtain a market advantage among tourists seeking environmentally responsible hosts. Hence this label is another market-based mechanism to incentive good practices, yet it does not provide direct mechanisms to repress undesirable practices.

Likewise the *Bandera Azul Ecológica* (Ecological Blue Flag) is another voluntary program to which beaches, communities, and private entrepreneurs can subscribe, provided they fulfill minimum environmental criteria. This program has been fairly successful in fostering community participation and joining beach communities and private entrepreneurs in a common effort to enhance the natural environment they inhabit. The Blue Flag program is well established and recognized around the country as a reliable indicator (mainly) for clean and safe beaches.

In spite of its importance in creating community awareness about the importance of ecological stewardship, the Blue Flag program has a limited capacity to foster ecological critical awareness, which is often limited to organized cleaning and recycling projects, rather than long-term cultural change. Therefore, it is often

common that communities, who have in the past held a Blue Flag distinction, may in the turn of a year lose it given irresponsible practices on the hands of government officials, community members and visitors (La Nación Online, February 8 2008). In regards to the CST label, as with any other organic or green certification, there are many questions that come to light regarding its true ecological and social impacts, and also regarding the transactions costs required to obtain it.

Similar issues arise when we look at the distribution of benefits associated with tourism in Costa Rica, as well as when we look at the social implications regarding changes in the quality of life of citizens associated with the proliferation of a tourist industry that taps on nature for attracting customers. Hence, issues of social justice cannot be ignored when talking about ecotourism. As will be discussed later in this chapter, such issues are also shaped by moral conceptions of how development should advance human and ecological well-being. However, before addressing this important topic, we first need to give a look at the practice of bioprospecting and how it weaves together qualities of the natural and truth.

Vb.iii. Bioprospecting

In a capitalist world of specialization only those companies and institutions that manage to keep up with state-of-the-art technology and knowledge can succeed. Thus, from a free-market vantage point, if nature is to be saved from destruction it has to be transformed in ways that make it fit current market demands. Given the

genetic and biochemical revolution that invaded research laboratories after the discovery of the molecular structure of nucleic acids (including our DNA) in 1953, it was only a matter of time for pharmaceutical entrepreneurs to realize the incredible opportunities for profit-making associated with such sophisticated ways of knowing human and nonhuman nature. For human beings, the breakthrough of the double helix was followed by the decoding of the human genome and so it goes. Yet, the more we know, or rather the more pharmaceutical companies know, about our genes and how they relate to our biophysical nature, the more we need to know about the rest of the natural realm and the biochemical elements and processes that help sustain life. This is so, because it is precisely in nature where we can find the cheapest and largest diversity of biochemical compounds and biophysical processes that can help humans live, longer and better.

Bioprospecting is the name given precisely to the kind of scientific research oriented to identify new chemical compounds and biochemical processes that can be used for the manufacturing of new pharmaceuticals, processed food systems, textiles, fuels, cosmetics, building materials or what-so-ever. It was within this context that Costa Rican and foreign leaders – biologists, politicians, financiers – saw huge potential for using the richness of Costa Rica's biological diversity conserved within protected areas (ASPs). These leaders recognized in bioprospecting a new mechanism to blend nature conservation- and development efforts centered on the sustainable use of biodiversity – saving, knowing, and using it. Encouraged by mounting interest in the

subject matter both among international scientific circles and among international funding agencies, these personalities joined forces to create the National Institute of Biodiversity (INBio) in 1989 (Zeledón 2000, pp.42-5). Yet INBio, in spite of its deceiving name, was constituted as a nongovernmental organization and thus it is neither 'national', nor controlled by democratically elected representatives (ibid., pp.46-51).

In fact, this NGO was purposely created as a parallel structure to the ASPs and the Ministry of Environment in order to avoid the bureaucracy implicit to the administration of public institutions (ibid., p.46, 127-8). Within this context the institution's main objectives are:

1) Development of a national biodiversity inventory
2) Prospection for useful chemical compounds (bioprospecting)
3) Development and maintenance of taxonomic- and geo-databases
4) Dissemination of information

Given the support received from political leaders since its conception in 1989, INBio has always enjoyed privileged access to the ASPs and its resources. As a consequence it maintains research stations within protected areas; has been officially designated as the institution in charge of developing a national inventory of taxa; and it is also allowed to commercialize products derived from research conducted in the ASPs (ibid., pp.109-15). In exchange for these services, INBio is required to pay back to the

ASPs at least 10 percent of the budget assigned to any biodiversity bioprospecting contract, as well as 50 percent of the dividends generated by the commercialization of any product derived from INBio's research (INBio-MIRENEM Agreement 1994, clauses XI and XII). In addition, INBio collaborates with the training of park rangers as parataxonomists – in charge of collection and preclassification of specimens – and with the maintenance of facilities in the parks – more than 28 biological stations (Zeledón 2000, pp.51-60).

However, not all relationships with public institutions have been as straight-forward for INBio. In fact, after a controversial transaction it inherited the taxonomic collections (plants and butterflies) held by the Museo Nacional (National Museum). Nevertheless, after pressures by former director of the Museum, Melania Ortiz Volio, these collections were returned to where they belonged, as part of the national patrimony, in 1992. In spite of the evident conflict of interests between a truly national institution like the National Museum and an NGO like INBio, for the custody of taxonomic collections, the institutions seem to have learned to collaborate both through joint publications and by having INBio donate important taxonomic data-bases and specimens (ibid., p.116).

INBio also understands that given the fact that it portrays itself as a national institution, it needs to give back to the country for using its natural patrimony. The

services that INBio offers Costa Ricans beyond financial compensation paid to the ASPs and the taxonomic collections donated to the National Museum include:

- Recruiting and training of biologists, taxonomists, parataxonomists and other support personnel
- Development and maintenance of collections of taxa
- Publication of books, flyers and other educational materials with information about native species and ecosystems
- Generation of an on-line public taxonomic database of all catalogued species together with an associated geographic information system of Costa Rica's ecosystems
- Cooperation with public universities and other public and private organizations as key partner in several research, extension and outreach projects
- Educational workshops and subsidized entrance fees to INBio Park for school students and adults

In spite of these very concrete contributions, the role of INBio within the country's sustainable development has not gone uncontested and seems unclear at best (Castree 2003a, pp.38, 40-1). In fact, bioprospecting contracts signed by INBio turned out to be half successes, or rather failures, depending on who is the commentator, given the fact that they have largely fallen short of delivering true marketable products – with three exceptions (PEN 2006, p.215). Moreover, questions can be raised on whether

the institution is paying enough to the National System of Conservation Areas (SINAC) to justify its self-declared role as supporter of conservation efforts and as the nation's monopolistic bioprospecting broker. Likewise one could easily question the means used by the institution to measure its contributions to the integral development of Costa Rican society.

As illustrated by its annual reports (2004, 2005), INBio's conception of social accountability emphasizes financial reports and close monitoring of publications per year and visits by researchers and personalities. Yet it is not informed by a coherent conceptual framework that clearly elaborates – and opens to public scrutiny, what are the institution's understandings of such complex concepts like development and nature conservation. As put by Castree (2003a, p.50), "there is a tendency by INBio advocates to equate development with monetary amounts whose significance is, apparently, self evident", while there is no clear definition of what 'wildlife conservation benefits' is supposed to mean: is it genes, habitats, species? And how much conservation would be enough? These questions in turn, as the author clearly puts it, can only give rise to instrumental discussions that would be defined and biased by the particular interests of the stakeholders involved.[78]

[78] Noel Castree (2003a) provides a thorough review of the instrumental and relativistic character of the traditional contrasting assessments of the INBio experience in bioprospecting and its contributions towards advancing conservation and development.

Rather than focusing on its financial (cultural or ecological) viability, we are more concerned with the moral legitimation of INBio and its practices; a very relevant question since INBio is very aware of its deeds to society and understands that it is tapping on the national patrimony, with great advantages in terms of reputation and monetary support for its employees. Therefore, together with ecotourism and the PES program, the case of INBio and biocommerce in general asks for further exploration of the moral implications implied by the development model they support.

Herein it is important to highlight that institutions dedicated to the generation of scientific knowledge of nature need to keep in mind that ecological processes need to be studied in context – ecological and social. In tune with this observation they need to see species inventories and taxonomic databases as tools to understand biophysical processes rather than ends on their own. Instead of pursuing further levels of abstraction that simplify nature into fragmented elements of a data base, research institutions ought to inform efforts to raise ecological awareness by integrating and contextualizing the knowledge they generate into an understandable socioecological whole. As a consequence, research institutions and researchers need to envision different ways to measure their progress in making sense of the natural realm that go beyond the marketability of the products they develop or the publication of findings in specialized literature.

By the same token, research efforts need to be subject to national scrutiny so that their efforts in commodifying nature remain within established limits, which do not respond to economic interests or merely ecological criteria, but rather to moral imperatives that respond to society's constructions of desirable and good ways to engage the natural realm. Thus it is important to mention the role of INBio in shaping of the Biodiversity Law, which made Costa Rica the first country in the world to actually make into national law the agreements of the Convention on Biological Diversity (CBD). The Biodiversity Law does in fact establish mechanisms to regulate access by bioprospectors to the 'elements of biodiversity' (Arts. 60-70), while also establishing the need for bioprospectors to play a key role in fostering bioeducation, public awareness of the importance of biodiversity, research and technology transfer (Chapter VI). Even though, this law can be perceived as a rhetorical instrument to appease critics of bioprospecting, and biotechnology in general, rather than a real tool to limit the commodification of nature, it does point towards a direction sanctioned by intrinsic geographic judgment.

Next, we go beyond the discussion of market-based conceptualizations of the natural realm, to explore also how the market-centered place-making project weaves together conceptions of social justice and truth. This will allow us to move in a direction that helps us better understand how these virtues and their associated empirical realities can help us move towards (or deter us from) intrinsic progress in transforming Costa Rica.

Vc. Sustainable Development and Justice

Sustainable development relies on the assumption that conservation practices can further economic growth and thus improve the well-being of humans. Nevertheless, if not taken lightly, it remains unclear what is really implied by well-being and how is it supposed to be facilitated by development. Moreover, the sustainable development motto is not explicit about how well-being should be 'distributed' around society. Therefore, one has to ask: When we reach a state of sustainability in development, are we all going to be equals as the communist ideal suggests, or are we going to continue to be different, and if so, given the great material differences existing in developing countries like Costa Rica, how are we going to rationalize poverty and suffering alongside wealth and waste? In light of contextual material and intellectual differences in terms of resources and opportunities, what transformations are going to represent progress and which not? These are very complex questions which cannot be answered in a positivistic way. However, it turns out that we can clarify the intricacies of the sustainable development model by looking at the moral frameworks that inform the rationalizations of justice and truth used to answer those same questions.

In the context of the Costa Rican sustainable development paradigm, the moral frameworks informing conflicting understandings of the virtue of justice can be framed under two different political ideologies: the market-environmentalist view and the post-social-democratic one. The former is based on the moral precepts behind

classical economic theories currently referred to as neoliberalism, while the latter is based on diverse moral-philosophic principles converging around often abstract conceptions of solidarity, harmony with nature and human rights.

Though not openly recognized as such, neoliberalism is simultaneously an economic theory and a moral philosophical construct. As an economic theory it relies on classical free-market economic principles that began to emerge in Britain during the seventeenth century among circles of mainly Protestant trading and manufacturing entrepreneurs, who opposed the then-prevailing, monarchy-controlled mercantilist system (Peet and Hartwick 1999, p.21). As explained by Peet and Hartwick, the idea of free-markets, i.e. free from the hands of the government/crown, was (and is) based on rather simplistic, historically and culturally specific assumptions that sought to reconcile the interests of an emerging class of traders and industrialists with that of the common good. They included:

> "potential harmony between individual self-interest and the public interest without state intervention; the equilibrating tendencies of the forces of supply and demand in free markets; the achievement of higher productivity through specialization and the division of labor; and most importantly, the ability of the market to yield natural and even just prices" (1999, p.21, underline added).

These assumptions were famously articulated into a theory of economic behavior by Adam Smith, a Scottish moral-philosopher (1723-1790). However, in his book the *Wealth of Nations* – published in (1776), Smith did not only elaborate an economic theory, but also managed to articulate notions of moral philosophy developed by seventeenth and eighteenth century philosophers such as Thomas Hobbes, John

Locke, David Hume, and more importantly, himself. Namely, Smith's economics was based on a philosophy of human nature articulated in his *Theory of Moral Sentiments* (1759), which rationalized the contemporary moral desire "to reconcile individual striving with the common good" (ibid., p.23-25). Thus, as explained by Peet and Hartwick (ibid., p.26), Smith's economic theory was also a theory of justice where free market competition was conceived as a necessary means to regulate a society inevitably activated by self-interest. Over the long run, the authors continue: "markets and free competition would force prices toward their natural, or socially just, level […]. Self-regulating markets were the 'invisible hand' that transformed private interests into public virtue". In doing so, markets became "virtuous institutions of social efficiency".

As explained by Peet and Hartwick, the term 'natural' or 'socially just' price was used by Smith in the medieval sense of the word where the just, real price of a commodity was thought to be equivalent to the amount of labor required to produce it – its natural price. In Smith's own words (2003 ed., p.43): "Labour […], is the real measure of the exchangeable value of all commodities. The real price of every thing, what every thing really costs to the man who wants to acquire it, is the toil and trouble of acquiring it". Further ahead he clarifies (ibid., p.78):

> "When the price of any commodity is neither more nor less than what is sufficient to pay the rent of the land, the wages of the labour, and the profits of the stock employed in raising , preparing and bringing it to market, according to their natural rates the commodity is then sold for what may be called its natural price".

Yet, as recognized by Smith, in modern societies organized after a complex division of labor, there are only a small number of commodities and amenities that "a man's own labour can supply him. The far greater part of them he must derive from the labour of other people, and he must be rich or poor according to the quantity of that labour which he can command, or which he can afford to purchase"(ibid., p.42). But Smith acknowledged another obstacle in attaining just natural prices for commodities and labour (ibid., p.70): "As soon as the land of any country has all become private property, the landlords, like all other men, love to reap where they never sowed and demand rent even for its natural produce."

Thus, in order to rationalize this 'natural' tendency towards self-interested exploitation of others' labour and of nature's resources as revealed by common practices such as rent collection, exploitation of workers and underpayment, and price inflation, the Scottish thinker established a difference between natural prices and market prices as follows (ibid., p.79): "The actual price at which any commodity is commonly sold is called its market price. It may either be above, or below, or exactly the same with its natural price". He continues:

> "The market price of every particular commodity is regulated by the proportion between the quantity which is actually brought to the market, and the demand of those who are willing to pay the natural price of the commodity, or the whole value of the rent, labour, and profit, which must be paid to bring it thither".

Accordingly, under free-market competitive conditions, when market prices drop below natural prices – as a consequence of an excess supply of goods, labor or

capital, landlords, capitalists and workers, would shift land, capital and labour into the more profitable employment, "assuring productive efficiency and justice" (Peet and Hartwick 1999, p.27) . Thus, according to Smith, supply and demand forces, under free competition conditions, would in the long run force market prices to approach the natural just prices (2003 ed., p.82):

> "The natural price, therefore, is, as it were, the central price, to which the prices of all commodities are continually gravitating. Different accidents may sometimes keep them suspended a good deal above it, and sometimes force them down even somewhat below it. But whatever may be the obstacles which hinder tem from settling in this center of repose and continuance, they are constantly tending towards it".

Under this moral framework a more just society is one where each individual, or group of individuals, will obtain from the market as much as they deserve given their effort – through the value of their own labour – and/or skill and advantages in accumulating capital to command others to labor for them. According to this merit-based conception of social justice, as long as markets are efficient, the prices of goods and services, as well as the price of one's labor are going to be just and natural. Therefore, the relative efficiency of a given market becomes a measure for the degree of justice in a given transaction within this market. As a consequence, according to Smith, it is on society's interest to facilitate a free-market ruled solely by the invisible forces of supply and demand since it would not only guarantee a just distribution of resources, but would also promote infinite economic development, encourage population growth and prevent labor shortages (ibid., pp.113-4):

> "The liberal reward of labour, therefore, as it is the effect of increasing wealth, so it is the cause of increasing population. To complain of it, is to lament over the necessary effect and cause of the greatest public prosperity"

But the theory of justice elaborated by Smith was to be extrapolated to include not only trade among individuals but also trade among countries. As explained by Peet and Hartwick (1999, p.29), such a feat was accomplished by the wealthy British trader in securities David Ricardo (1772-1823) through a trade model based on competitive advantage developed in his *Principles of Political Economy and Taxation* (1817). This theory was developed in an effort to support rising opposition by traders and 'radical philosophers' of the time, against Britain's Corn Laws – a set of sliding import tariffs on grains designed to protect the interests of landed elites against foreign competition, and deemed detrimental to the common good of Britain by their opponents. Peet and Hartwick explain (ibid., p.29):

> "Human happiness, Ricardo said, would be increased by each country producing (and then trading) those commodities that it was best fitted to produce by virtue of natural or historical circumstances. Even when one country was consistently more productive than another, trade would benefit both. This was true because total production would be greater through each country specializing in the product for which it had the greatest comparative advantage, or comparative disadvantage – with production being prevented from concentrating exclusively in one country by the difficulties of moving capital across national boundaries."

This moral-economic rationalization is the underlying and legitimizing principle behind the creation of the General Agreement on Trades and Tariffs, later called World Trade Organization and behind the increasing number of multilateral trade agreements like the North American Free Trade Agreement and the Central American Free Trade Agreement, whose ultimate purpose is to promote trade among nations by cutting down tariffs. Likewise, in the context of post-Bretton Woods development economics, neoliberal ideology, through its institutional arms – the IMF, the World

Bank and their branches, revived the moral framework constructed by Smith and Ricardo, to support systemic structural changes amongst developing countries in Latin America and the rest of the world. According to this view reduced government spending and free-trade conditions would guarantee economic growth and just money-mediated transactions regardless of the 'development stage' of the trading partners involved – a position sharply opposed to the ideas preached by Keynesian principles and 'dependency' theorists, feminists, environmentalists, among others.

Moreover, as Ricardo himself recognized, his "theory assumed that all partners in trade benefited from an increase in total production in accordance with their comparative advantages" (Peet and Hartwick op. cit., p.29; underline added). This of course explains why in societies increasingly ruled by *laissez-faire* conditions, neither do all partners benefit equally from an increase in total production, nor do all countries benefit equally from international trade, and what is worse, this discriminatory process is assumed as inevitable and hence not morally questionable. As explained above, Smith's merit-based moral framework assumes that these differences are natural and ought to be regulated by the market alone. Hence it is not surprising to read expressions like the one uttered by neoliberal development-economist Jeffrey Sachs in 1991 when explaining the neoliberal approach to development (Cited in Peet and Hartwick 1999, p.53):

> " 'liberal' in the classical sense of lack of state control and reliance on markets and the price mechanism, 'liberal' in the contemporary sense of concern for victims, but 'neo' in the sense that suffering was accepted as an inevitable consequence of reform and efficiency."

Granted that this expression may be described as radical or representative only of Sachs' view, yet such a rationalization has been further justified by well known development economists such as UCLA's Deepak Lal, who recognized that markets were not perfect, yet imperfect *laissez-faire* market mechanisms would do better in practice than imperfect (distributive and protectionist) political economic planning (ibid., p.49). Thusly put, neoliberal economists consider it erroneous to treat developing countries as belonging to realities different than the one observed by European classical economists, but rather insist in imposing these countries' experiences as examples of the universal validity and moral desirability of classical economic principles and models (ibid., p.49). Such a narrow world-view blurs and ignores any intrinsic differences that the specific history and the geographic context of each country – be it of a 'developing' kind or whatsoever, may place upon the nature of its money-mediated and non-money mediated transactions and the way they influence the allocation of resources.

When the classical-economic take on justice is combined with the free-market take on nature – as constituted by tradable goods and services – it serves to legitimate a simplistic moral theory that views people's moral right to gain access to natural resources as determined by individuals' (and countries') purchase power. That means, access to the goods and services provided by nature is available to those individuals and groups of individuals that have the money to acquire them. By the same token, under a market-environmentalist umbrella, development instruments such as the

promotion of ecotourism and the commercialization of nature, should favor those management solutions that seek to guarantee and enhance a more efficient market of environmental goods and services.

In terms of environmental services, market efficiency is a function of how well prices reflect and acknowledge – i.e., 'internalize' – the environmental costs of producing a given good or supplying a given service, and of how exclusionary (discriminatory) and exhaustive the market of a given good or service is (Randall 1983).[79] It turns out that it is much easier to guarantee an exclusionary market, which means a market that is open to a limited number of users and customers, than to flawlessly establish prices for environmental goods and services that truly internalize environmental costs. As a consequence, with the exception of efforts to develop a PES program, the market for environmental goods and services in Costa Rica generally emphasizes exclusionary measures such as the privatization of public spaces and activities by charging entrance fees, bottling drinking water, or establishing maximum occupancy levels in national parks and other attractions where entrance fees are relatively low.

[79] This is not to mean that all economists see the problem of environmental degradation as one characterized by a failure of the market to internalize externalities, or so-called social and environmental costs. As explicitly acknowledged by Randall (1983) and clarified by Fullerton and Stavins (2000), there are several economists, mainly following the seminal work of Coase (1960), who reject this approach when taken to a simplistic extreme. Nevertheless, this assertion – of the fact that market-environmentalists focus on market failure as a theoretical basis to study and deter environmental degradation – holds true for orthodox neoliberal economists, who are in turn the dominant force shaping current environmental policy in Costa Rica and elsewhere in the western world.

In tune with this rationale, and given that most places devoted to receive and serve tourists in Costa Rica have arisen in the context of free-market-based development policies, public and private tourist venues are increasingly managed according to economistic criteria such as efficiency, user satisfaction, added value and opportunity cost. Therefore it is not a coincidence that in his proposal to adapt the parks to the challenges of the new times, Mario Boza justified it as an attempt to make parks "more profitable and efficient as a public service" (2005, p.4). As expressed above, what this actually is is in fact an attempt to create a publicly-owned business, i.e., a conservation business free of unwanted government interference. Not surprisingly, this was the same rationale behind the establishment of INBio as an NGO rather than as a government institution.

Within this moral geography of development, which seems to be increasingly dominated by places instrumental in furthering neoliberal ideals, it is important to remind ourselves that such understandings of nature, social justice and truth, even though dominant in the current place-making agenda, have not gone uncontested. Opposed against the sometimes absolutist moral framework that legitimizes the market-environmentalist's agenda, we find a much more diffuse set of conceptions of what is just, true and desirable to take place in Costa Rica . These varying conceptions emerge from a menagerie of groups and agendas that includes those values forwarded by feminists, intellectuals, artists, ecologists, communities, indigenous groups and farmer unions, among others. Nevertheless, it can be argued

that a common thread unifying them is an interest on forwarding a notion of justice based on national solidarity.

This perspective could be described as informed by an egalitarian, rights-based theory of justice, under which a more just society is one that solidifies everyone's universal rights to access the material and intellectual benefits of development. With respect to nature's bounty, this group's agenda focuses on solidifying people's universal rights to access natural resources for recreation, nourishment and income generation. By the same token, it also pursues the enhancement of the quality of those resources – e.g. clean drinking water, clean air, appropriate places to treat solid waste, etc., even in cases when such a goal stands against economic growth.

With this pluralist critique in mind, it is important that we revisit the existing moral geographies fostered by the sustainable development milieu and filter them through the lenses of intrinsic geographic judgments. Together these two perspectives – the rights-based and the geographic – will help us construct alternative place-making agendas that expand the realm of the possible and desirable beyond the possibilities and instruments offered by neoliberal thinking.

In the case of the public protected areas, although it is important that they are managed following strict financial planning to guarantee that public resources are not wasted or ill-spent, financial responsibility and sustainability has to be seen as a

means rather than the ultimate goal driving conservation policies in the country. Under this light, some of Mr. Boza's proposed policies to maximize income-generation opportunities for the public protected areas could be instrumental in further solidifying the financial basis of the system. These could include for example a fuller engagement in fostering a true market for environmental services provided by forests and other ecosystems, where national and international institutions would increasingly recognize financially the services that protected areas provide to the national and global community.[80]

Nevertheless, the fragmentation of the National System of Conservation Areas into isolated parks which would compete among themselves for resources following the crudest market mentality is not desirable. Intrinsic geographic judgments tell us that our place-making efforts should be guided by an effort to increase access to nature's gifts. Therefore, while seeking to conserve the greatest diversity of life, the ultimate goal guiding our conservation efforts should be to facilitate places of reconciliation where society can learn more about its own nature and about the environmental implications of its practices. Along these lines, rather than focusing on customer service, user satisfaction and differentiated pricing, parks should be focused on increasing its extension mechanisms to become active agents of change, rather than simple passive displays of a trapped nature. If they are to become places of inspiration for the betterment of society, they cannot seek to become simple sellers of

[80] In 2002 for example, the totality of public protected areas collected only $7,536 in payments for environmental services from the FONAFIFO PES program (Fürst et al. 2005, pp. 31-3).

'pure nature' and its various representations, but rather interactive grounds for learning and teaching society how to better live with nature.

This is particularly important since, as shown on Table 8 below, even though public protected areas are now being visited by a number of visitors that amounts for almost 13 percent of the Costa Rican population, there remain about 9 out of every 10 Costa Ricans that don't visit these areas – provided that no visitor visits more than one park a year or the same park more than once.[81] Moreover, a survey conducted by FMM&A and CID-Gallup for The Nature Conservancy in 2005, revealed that 23 percent of people interviewed had never been to a protected area, while only 14 percent said they visited them regularly (TNC 2006, p.2).[82]

[81] Even though the number of national visitors to National Parks has clearly increased (three times, to reach 560,000 in 2006) since 1985, this figure looks rather rachitic when contrasted with the estimated 2 million pilgrims that visited the sacred church of the *Virgen de los Ángeles* (Virgin of the Angels) – the Costa Rican equivalent of Mexico's Virgin of Guadalupe – during the 9 days preceding the yearly religious celebrations in the city of Cartago (La Nación, August 1 2007, p.8A).

[82] The survey was conducted based on a country-wide randomly selected, demographically representative sample of 993 people. 63 percent of interviews were conducted in person and 37 percent were conducted by phone. It has a margin of error of 3.2 percent and confidence level of 95 percent.

Table 8. Foreign and national visitation to public protected areas (ASPs) (visitors and population counts offered in thousands).

	1985	1995	2000	2006
Total visitors to ASPs	245.7	614.1	812.1	1,205.1
Foreign visitors (as %)	25.8	41	42	53.7
National visitors (as %)	74.2	59	58	46.3
National visitors to ASPs	182.2	362.3	471.5	558.5
Costa Rican population	2,416[83]	3,470	3,925	4,401
National visitors as % of population	7.5	10.4	12	12.7

Source: Own elaboration based on data from Flores Silva (1991, p.126), ODD (2005, p.38) and PEN (2007, p.405).

If the contrary were to happen, i.e., protected areas would mainly worry about making more money, they would increasingly focus on pleasing the needs of foreign visitors. This is exactly what is going on in Volcan Poás National Park, whose foreign visitors now constitute more than half of its customers and at least 85 percent of its income from entrance fees.[84]

Thus, according to intrinsic geographic judgment, it is not morally desirable for public institutions, such as the ASPs, to become specialized places focused on the commercialization or conservation of unrealistic, particularistic ideals of the natural. But, what are we to make of private institutions and businesses that tap on nature's bounty to gain a profit? Geographic judgments tell us that places and the activities

[83] Data provided for 1984 (Flores Silva 1991, p.126).
[84] Author's estimate with data from PEN (2007) and MINAE-SINAC (2006).

they facilitate cannot be judged out of context. Hence it is important to remind the reader, tourist and biocommercial entrepreneurs, that they cannot conceive their activities outside of the social reality that allows them to exist. Indeed, tourism and sophisticated biocommercial activities rose in Costa Rica, partly thanks to the way they were conceived as instruments for development.

However, intrinsic progress in development should not be reduced to the simple outcome of market-based competition and inexistent trickle-down mechanisms. Even though the moral framework that informs neoliberal ideology does respond to a portion of human reality – the moral virtues inspired by individualism and evolutionary struggle for survival, social justice should not be simplistically conceived as the natural result of individual struggle regulated by abstract forces of market supply and demand. Human beings are social beings and as such, they construct their reality in relation to other individuals and society as a whole. Hence the virtue of social justice, which legitimizes every progressive social endeavor – including development, tourism and biocommerce – needs to be informed by moral frameworks that guide us towards more complex and pluralistic understandings of justice as a social virtue. These constructions need not stop at justice conceived as a virtue isolated from the natural realm, but should indeed construct ideals of what is just and desirable as mutually dependent with what is ecologically desirable.

Following with this premise, self-declared ecotourist venues ought to see beyond the understandable utilitarian purpose behind their efforts to conserve nature and acknowledge also their moral duty to become active agents of change in the context of a country where material differences among its citizens are paramount. Therefore, they need to develop truly responsible extension programs that allow Costa Ricans access to services generally sold to foreign tourists at prohibitive prices. Even though some ecotourist attractions have differentiated fees for residents and nonresidents, as in the case of La Paz Waterfalls Gardens, The Monteverde Rainforest Preserve and La Selva Biological Station, these fees continue to be too high (and the places too far away form population centers) for a middle-income Costa Rican family to afford visiting them, not to mention a middle-low, or low-income family – the minimum monthly wage for formally hired workers is about $150 dollars.

The latter assertion is confirmed when we look at the prices that ecotourist venues charge for their services and compared them against the $150 earned per month by formally hired workers paid the minimum wage. A night stay at La Selva for example can range from US $56 for a Costa Rican adult and $28 for a child, to $88 for a foreigner adult and $34 for a child. Rates include lodging, three meals, local taxes, and one guided walk (half day) per stay. Children under 5 years are free of charge when sharing a room with parents. A family of 4 can stay at an all-inclusive home for $230. For those families or groups that cannot afford the time/money to stay a night, half- or full-day private tours range from $32 to $40 per passenger, foreigners and

nationals paying the same, while guided hikes can cost a foreigner $28 for half a day and $36 for a full day – Costa Ricans pay about two thirds of this price. Lunch – quite good actually – is $12 dollars for foreigners and $6 for Costa Ricans.

In the case of Hotel Punta Leona it is $35 a day, and even though, after decades of legal litigation, locals managed to secure free access to the beach used by the hotel, they have little access to services and no access to the private nature reserve maintained by the hotel. Likewise a Costa Rican wanting to enjoy the amenities offered by the La Paz Waterfall Gardens would have to pay $18 if she is an adult or $12 if she is a child. The Monteverde Rainforest Preserve in turn offers more affordable prices at $4 for adults and $3 for children, yet a guided tour costs $15 and a night-stay at its lodge between $40 and $50 – a night stay at Monteverde is a must for national tourists since it is far away from every major population center.[85]

In sum, for Costa Rican citizens, recreation in private areas is more than ever a luxury that few can afford, a reality that is exacerbated given the increased costs of transportation, room and board that make visits to public protected areas far away from population centers, more and more expensive. In turn recreation in places with clean beaches and rivers is almost a five-star delight. To make things worse, around these areas, goods that used to be free like drinking water from a faucet or eating a coconut from a palm are now often expensive as potable water is now bottled and

[85] Information regarding entrance fees and other rates obtained from the OTS, La Paz Waterfall Gardens and CCT websites and by phone for Punta Leona.

coconuts are sold in dollars. This lamentable situation is nowhere else more clearly evidenced as in the case of Tabacón Resort.

Located on the Tabacón River, whose waters are heated up to 150 degrees by hot-springs emerging from the Arenal Volcano; the Tabacón Resort has successfully converted a ramshackle public attraction into a high-end spa that charges $60 for a day pass. In the process it has successfully shut down all major road accesses to the Tabacón River in spite of an explicit prohibition in Costa Rican Law against such practices (Regulation for the Control of Urbanizations, Art. III.3.7.1; Law No. 276, Arts. 1,4,10). In fact, the place where the resort is now located – and fenced off by huge walls – used to be a rather rustic private venue whose owner had built a huge swimming pool and water-slide to attract visitors, who if reluctant to pay the relatively low entrance fee he would charge, could very well swim and relax downstream.

But with the rise of tourism, the place changed hands about 17 years ago and with it progressively came huge investments which brought more pools –with varying water temperatures to please all tastes, built-in water falls, beautiful tropical gardens, a high-end restaurant, a 'Swedish-style' spa, a hotel, and so on. Almost fair according to free-market rules, yet in order to make its venue 'really' exclusive – beyond the $60 ticket – the owners decided to shut down road-access to the river, making it practically impossible for average Costa Ricans, and even foreigners to reach its

waters. After a lawsuit, the resort opened a sister venue on the other side of the road in order to guarantee access to the river for everyone. Thus the owners covered their backs from the law and settled the matter. As a result, this place came to be playfully known among Costa Ricans as *El Tabacón de los Pobres* – The Poor Man's Tabacón. Yet in the long run, this venue, which was still pricy, was not worth the effort for its owners and although it exists on paper, it is very seldom opened to the public – as my countless visits to the place during different times of the year can attest. In addition, to make things worse, for a reason I cannot explain without being cynical, resort owners paved and channeled the river bed 10 meters above and below the only remaining access-point to the river. This of course, aside from creating a not very pleasant Los Ángeles River-like atmosphere, makes the stream flow faster and unsuitable for bathing.

This tendency to restrict access to public and private places is directly opposed to the virtue that compels us to facilitate access to the richness of nature to an ever greater number and diversity of people. Likewise spatial segregation inflicted by these exclusionary transformations of reality, hinder the capacity of tourists and nontourists alike to see through to the real, thus reducing public awareness of the processes that sustain places. Yet, foreign visitors flying into the booming Liberia international airport, located in the heart of the touristy Guanacaste Province, can enter and leave

Costa Rica without setting a foot on a large city.[86] Likewise, those visitors that go to the urban areas by force, or by choice, are seldom provided with the information to make out the geographic (dis)connections that allow government officials and tourist entrepreneurs to brag about how Costa Rica sets aside almost 30 percent of its territory for conservation. Hence, foreign visitors are increasingly prevented from witnessing the true consequences, in ecological and social terms, of their visits. By cramming them into climatized vehicles and hotels, they thwart their capacity to understand the degree of segregation – and even destruction – needed to create and sustain those 'sustainable places' they visit. As a result, they are seldom exposed to the pollution, destruction of wetlands and often material exploitation of illegal Central American workers needed to host them.

Tourist entrepreneurs in turn, need not avoid acknowledging that in order to run their business they use scarce resources such as water, lands and energy. Therefore, they should devise responsible mechanisms that guarantee that their thirst and hunger does not prevent individuals and communities from accessing these resources, but rather facilitate social and ecological mindful practices. In doing so, they would contribute in moving the barrier of conservation, not only beyond private and public protected areas, but also beyond forest conservation, to include the water cycle, the conservation of soils and its nutrients and the fostering of scenic landscapes.

[86] About 12 percent of visitors entering Costa Rica by air use the Liberia airport, with numbers likely to increase (ICT 2006, p.5).

In tune with this imperative, the existing PES program represents, as affirmed before, a true step forward towards a conservation policy that is not only a parks-based policy but rather one that encompasses nature in all its manifestations in and out of protected areas. Thus, as discussed in detail in Chapter VI, the PES program should be extended to include practices other than forest conservation and agroforestry systems to recognize the contributions of other agroecological activities to the conservation of natural diversity in the country.

Aside from extending its ecological reach, the PES program also faces serious challenges in truly making participation of its benefits accessible to members of society regardless of their purchase power. As demonstrated by Miranda et al. (2003, pp.47-8) the PES program tends to favor participation of middle and large landowners who can afford the transaction costs required to participate. This is the case because participating farmers need to have sufficient lands under production to provide income while the PES contract is approved – as long as a year for half the applicants (Miranda et al. 2003, p.30). In addition, small landholders generally cannot afford to set aside large portions of their properties for long-term forest regeneration or timber plantations, since they depend on cash-crops for subsistence and the compensation offered by the PES program would not be enough to offset this income.

In addition, there are large sectors of society not legally eligible to participate in the program. These include formerly landless peasants that have received lands from the

government and others who don't possess titles for their lands – even though they may have occupied them for decades. Also, on occasion, peasants own lands located very close to protected areas, or even within buffer or recharge zones, and as a result are legally banned from implementing land-use practices such as cattle grazing, logging for timber and fire wood, and even plowing the land. Nevertheless given the lack of legal titles or the money to pay for a lawyer to formalize their claims on the land, they are not allowed to join the PES program to receive important financial compensation for a land they forcefully have to maintain under conservation schemes. Thus, they are prevented from obtaining any economic benefit from their lands, be it through agriculture or through the PES program.

Therefore, it is clear that more efforts need to be made to recognize the social and ecological services provided by farmers that partake in socially and ecologically mindful agricultural practices – through provision of healthy and fresh produce, direct relationship with customers, safe wildlife corridors, and reduction of chemical fertilizer- and pesticide use – beyond the existing acknowledgement of agroforestry systems, to include also crop rotation, organic farming, and other management intensive practices. Again, even though the development of a market for environmental services is conceived from a market-centered perspective, if it is going to become a development tool, as it claims to be, then it should reconsider its immediate objectives, in selecting lands and beneficiaries according to more diverse ecological services and social purposes.

Lastly, programs based on payments for ecological services shall not be seen as substitutes for a coherent policy focused on fostering a true culture of ecological awareness. Even though the PES program (Miranda et al. 2003, pp.33-8; Miranda et al. 2006) has proved itself successful in engaging participants in the active conservation of resources existing in their lands, my conversations with landowners have shown that the program does a poor job in maintaining the interest in conservation after the PES contracts are over. This is so because a great majority of landowners are only interested in the program as an extra hand in making their already-existing timber plantations more profitable. Therefore when timber price-fluctuations or increased maintenance costs render timber production less profitable than expected, the incentive provided by the PES program ceases to be large enough to maintain an interest in renewing timber plantations (Miranda et al. 2004, pp.32-3).

Even though this program has been successful in expanding forest cover in the country by almost 5 percent of the national territory between 2000-2005, the country actually saw an increase in the rate at which deforestation occurred from an estimated average of 3,000 hectares per year between 1997 and 2000, to a little more than 5,000 per year during the following five years.[87] Indeed observers that celebrate the expansion of forest coverage as a clear sign of progress in conservation efforts, have themselves expressed concerns for the high vulnerability of this land-use, given the

[87] There is some confusion in the literature as for the deforestation rate between 1997 and 2000 (see Table 2). But even if we used the highest estimate, 5,000 hectares per year, it would reveal that deforestation remained the same for the following five years.

persistent pressures of deforestation (PEN 2007, p.258). But even if these observers highlight the fact that 56 percent of forests are not protected in any way as a sign of vulnerability, my own calculations using GIS analysis show that even when protected, forest ecosystems are still vulnerable to destruction. In fact this analysis reveals that almost 13 percent of the deforestation for the years 1997-2000 actually took place within protected areas (Herrera 2006).[88]

These results are echoed by similar findings revealing the blatant fact of expansive deforestation in and around protected areas (and forest fragmentation outside of them) in the Osa Peninsula, and the evident challenges that these processes pose upon the conservation of unique natural habitats and the species they barely sustain (Sánchez-Azofeifa et al. 2002). Such findings confirm that the existing national conservation policies and the parameters used to determine progress mask the fact that sanctioned places of progress in conservation and reforestation continue to be highly vulnerable to the economic pressures driving destruction of forests and other habitats.

These empirical observations should not surprise anyone since the PES program actually reinforces a utilitarian market-based view of nature as natural resources, which cannot but increase the opportunity cost associated with the unproductive

[88] This calculation was performed using a shapefile of land cover produced by the Earth Observation System Laboratory (EOSL) at the University of Alberta Canada, the Tropical Science Center (CCT), and Costa Rica's National Fund for Forestry Financing based on LANDSAT TM 7 images for the year 2000. Detailed description of the image processing methodology is provided in (Sánchez-Azofeifa, et al. 2001). This shapefile was overlaid and intersected with a layer displaying polygons of protected areas produced by SINAC as of 2006.

conservation of lands. This reductive view of nature is counterproductive against society's long-term efforts to improve the quality of the environment we live in. This is so given the fact that as competition for access to ever more scarce resources like land and wood augments, conservation will be increasingly more expensive to society – provided conservation continues to be perceived as just another use of nature that needs to justify itself financially.

In contrast, if we advance a place-making agenda that triggers an increased appreciation of so-called agroecological, or agroconservation practices, that are simultaneously financially and ecologically sound, we would be able to foster an intrinsic appreciation of the favors we receive from nature, including the services received from forests, while helping enhance them. We cannot expect to be able to conserve nature if we don't simultaneously foster productive practices that reveal the biophysical, social and cultural threads that inherently link us to the natural realm. Such a cultural change would make the conservation of nature increasingly easier and cheaper – in ways that are truly inherent to development and social progress.

Likewise, we need to understand bioprospecting as well as other biotechnologies as tools for understanding nature, rather than mere tools to add market value to nature and its elements. Therefore, public institutions like universities and even NGO's like INBio, who use the public natural patrimony as its object of study, need to envision ways to render their research agendas independent from market pressures. Scientific

research needs to be at the service of society as a whole, rather than at the service of social interactions exclusively mediated by market transactions. In doing so, research institutions ought to emphasize their role as disseminators of contextualized understandings of nature and the processes it sustains with the purpose of advancing ecological awareness among the members of society.

Herein it is important to highlight the efforts made in the 1998 Biodiversity Law to emphasize the responsibility of research institutions to become educators and guarantors of ecological awareness (Chapter VI). But equally relevant, we need to highlight the effort to set culturally-sensitive guidelines to grant and protect non-marketable rights to reproduce traditional and indigenous forms of knowledge and uses of the elements of nature, as well as any innovations that may be developed in this manner (Arts. 82-5).

Rather than following a reductive market-spiral that limits our opportunities for progress, our policies need to be guided in a direction that fosters intrinsic appreciations of the natural realm, while generating the opportunities that help us make the benefits associated with our responsible utilization of nature accessible to increasingly larger portions of society. However, before we can move on to suggest place-based examples that expand our alternatives for progress, we need to first explore existing conceptualizations of truth and progress.

Vd. Market Sustainability, Conceptions of Truth and Intrinsic Progress

As we try to envision policy alternatives that effectively go beyond the goals and methodologies dictated by the understandings of social justice and nature supported by the market-sustainability milieu, it is almost unavoidable to see that such policies are also intertwined with conceptions of what is true knowledge and what ought to be its role in fostering development. In a society increasingly dominated by market values and associated technologies, relevant knowledge is the one that can have a utilitarian use, i.e. scientific knowledge, and hence the moral virtue of truth, and by association knowledge and information, is generally conflated with scientific knowledge.

Specifically speaking about our knowledge of nature, as demonstrated by the case of INBio, market-environmentalists believe that R&D activities should be liberalized to allow for both government and nongovernmental institutions to compete and participate in the development of new nature-derived products and services. Therefore, in their opinion, bioprospecting for drugs and chemical compounds, biotechnological research and development, the commercialization of minerals, flora and fauna should be driven by market forces. This is so because from their vantage point, the whole of the natural realm is reduced to tradable goods and services and hence, it is all open to scientific scrutiny. In addition market-based conceptions of knowledge and truth see these virtues as information that can be traded and owned. Hence, in order to facilitate and regulate market transactions of information, market-

environmentalists promote legislation (in and out of place rules) that enforces patents and property rights on products and services derived from specialized and exclusive knowledge of nature.

This trend is epitomized by the International Convention for the Protection of New Varieties of Plants (UPOV 91) (Congressional File No. 16.327), which is on the verge of approval given its controversial inclusion as a bill required for the implementation of the Central American Free Trade Agreement (CAFTA). In fact, with its far more individualistic, exclusionary, market- and technology-prone legislation, UPOV 91 threatens to crush the important steps taken with the approval of the Biodiversity Law. Specifically, this convention opens the whole of the plant kingdom – in any form – for research and innovation and renders subject to property rights, any innovation in terms of a variety's "morphologic, physiologic, cytological, chemical, molecular characteristics, or any other distinctive trait deriving from its genotype" (Arts. 3 and 13).[89] Likewise UPOV 91 restricts public access to common practices like barter of produce, exchange and reutilization of seeds by third parties, which are particularly important for subsistence, small- and mid- scale farmers and indigenous populations (Arts. 17-22).[90]

[89] Property rights are valid for as long as 25 years for perennial species and 20 years for all others (Congressional File No. 16.327, Art. 18).

[90] Advocates of UPOV 91 argue that these restrictions do not affect small and midsize farmers given the exceptions to the right of the innovator stipulated in Articles 21 and 22. Nevertheless, these exceptions only authorize farmers to reuse purchased seeds, or to distribute it to third parties for noncommercial purposes. Likewise farmers are not allowed to commercialize seeds (or reproductive 'means') from protected varieties. Small and mid-scale farmers are allowed to commercialize seeds of

The attempt to grant property rights upon the reproduction, storage and reutilization of seeds and other 'reproductive means' of innovative plant varieties blurs our capacity to appreciate the evolutionary and historic processes of adaptation and selective domestication that have allowed for plant varieties to exist prior to any recent or future biotechnological innovation. In doing so, such property rights also obscure reproductive capacities of plant species, their genetic material and the infinite range of biophysical characteristics that constitute a plant variety, in order to grant property rights upon those same varieties and processes to companies and scientists performing simple end-of-the-line genetic, physiologic or chemical modifications. Therefore, we cannot but reject the values informing legislations like UPOV 91 (now working in more than 60 countries), which blur our capacity to be aware and respectfully acknowledge the complexity of processes engaged in shaping plants and our own existence.

Given the state-of-the-art technology and very specialized training required to develop and use sophisticated biological innovations as the ones promoted by UPOV 91, place-making efforts that follow these ideals favor places that facilitate specialization of activities such as: agribusinesses and monocultures, technical schools, universities, industrial parks, research stations, research laboratories, modern airports and export/import facilities, power plants to provide reliable energy sources, etc.

---

ornamentals, fruit and timber varieties, as long as it is done within the limits established by the property-right holder.

Likewise, free-market understandings of social justice and development dictate that the moral duty of scientific entrepreneurs is to generate knowledge that produces income and wealth for the country. Hence, by providing jobs and purchasing services in the countries they do research in, global biotechnological companies are fulfilling their duty with society. Simply put, according to free-market ideology, the contributions to development and social progress by biotechnological companies and research laboratories need not be any different than the contributions demanded from shoe-factories or construction companies.

The case of La Selva Biological Station is a great example to illustrate how such a market perspective on the production of knowledge is put in place and praised simultaneously as a step towards sustainable development.[91] Located at the conflation of two major rivers that irrigate the northern Atlantic plains in what was formerly the private property of Leslie Holdridge, an American natural-resource manager and ecologist, this 1,600 hectares (about 4000 acres) research station is now owned by the Organization for Tropical Studies (OTS). A conglomerate of higher-education institutions from the U.S. and Costa Rica devoted to promote research on tropical biology around the world. La Selva Biological Station is according to many biologists "a researcher's paradise", and thus – as a Costa Rican biologist put it: "if you cannot do research in La Selva, you won't be able to do it anywhere" (Fernández pers. comm. January 15 2008).

[91] Information on La Selva was derived from public displays at the station and from the OTS web site, unless noted otherwise.

There, the generation of knowledge is streamlined through sophisticated services offered to researchers which include intramural housing, state-of-the-art laboratories, individual and group offices, computer labs, conference rooms and high-tech equipment. In addition, for the researchers' convenience, a large portion of trails are paved to facilitate access to bicycles, largely reducing the time spent in transportation between field sites and service areas. Moreover, the station provides three meals a day, which can be ordered as field-lunches to eat while at work on the woods and also has a laundry service and a workshop to build customized research equipment on demand.

In accordance, the kind of knowledge produced here is the one that gets published in top academic journals – about 300 publications a year and a grand total of 3,000+ in the last 40 years. The knowledge produced here is shared mainly with students coming from around the world to attend up to 100 courses a year. Students enjoy the same services offered to researchers and get to participate in the generation of state-of-the-art knowledge in classrooms and brown-bag lectures. Indeed during high-season, i.e., summer in the northern hemisphere, these lectures are basically a who-is-who list of the tropical-biology world.

During a weekend stay at the station that started on a Friday afternoon, I was able to see how there were basically no big differences between week-days and weekends. Nature knows no days off, so research can be conducted year round without social

disruptions. Indeed, the lack of contact with the social world, with Costa Rican society specifically, was the single trait that struck me the most from the place. Basically, in order to conduct research at La Selva, you do not need to know any Spanish, nor have to learn more about the country beyond its natural history. All you need is the funds and some extra cash to pay a shuttle that would take you directly to the airport in about 2 hours. In fact, interaction with Costa Ricans themselves is very limited since the cost of conducting research and using the facilities at the station are high for Costa Rican standards and most university professors generally are able to use their own university's research stations.

For these reasons personnel affiliated with the University of Costa Rica (UCR) and the National University (UNA) do not take as much advantage of the station, in spite of the fact the UCR and the UNA are OTS members themselves. Thus, most of the interaction between Costa Rican researchers and students with La Selva occurs thanks to sporadic field visits by biology students – once or twice in a 4-year program – or through in-kind scholarships awarded to undergraduate and graduate Costa Rican biology students to conduct research at the station. According to one student that has profited from these scholarships both as a graduate and undergraduate student these scholarships are very helpful and facilitate research and thesis writing. Yet their numbers have been decreasing in the last years (Fernández pers. comm. January 15 2008).

Thus, during the stay there I met people from Brazil, Germany, the U.S. and Canada, but I only encountered few Costa Ricans, namely my friend, a biologist conducting research there, and two researchers from INBio, and the station's support staff. Moreover, the design of the social areas and the social interaction itself resembled more of the kind you would expect to see at a Colorado ski resort: in the mornings people wear their specialized apparel for the outdoors and enjoy an early breakfast at the cafeteria; lunch is taken on the field, basically a sandwich, a snack and some bottled beverage; and for dinner the whole crew is back together and ready to go drink some beer at the closest bar, or over cards at the station's barracks.

As a matter of fact, whether or not they acknowledge it, La Selva works as an ideal for market-environmentalism. It is at the same time a hotel for academic tourists, a research station that generates valuable knowledge of nature, a profitable business that is financially sustainable, an example of a private conservation initiative that preserves primary tropical forests – about half of its 1600 hectares – and at other succession stages, while also receiving payments for environmental services from FONAFIFO. The full sustainability combo! Yet when brought under the lenses of geographic judgments a more ambivalent picture emerges.

Our moral geographic framework supports scientific research since it compels us to make sense of the diversity of ideas, life-forms, landscapes and social arrangements. In the specific case of biodiversity and ecology-centered scientific research, this type

of knowledge generation is very appropriate and useful in clarifying the way life-forms support each other and more importantly how human beings can help or hinder these life-sustaining processes. Important research conducted in La Selva by scholars such as Sally P. Horn, Lisa M. Kennedy, David and Deborah Clark, among others, has shown evidence of both how ecosystems and ecological processes have been (and are) transformed in light of anthropogenic and nonanthropogenic environmental change (Clark 2004; 2007; Clark and Clark 2006; Clark et al. 2003; Horn and Kennedy 2001; Horn et al. 2003). Likewise, a host of leading conservationists in the country have been trained by OTS in La Selva – Penn State biologist, conservationist and bioprospecting pioneer, Daniel Janzen being perhaps the most visible (Morell 1999, pp.76-84), while others have been related to this institution, as is the case of INBiO's founder, Rodrigo Gámez.[92] Hence, it is morally good and desirable to promote places like La Selva which can simultaneously help us conserve natural diversity, while helping us clarify how the natural realm is linked to the rest of reality – human actions included.

Nevertheless, beyond its close relationship with personalities within the national and international conservation and bioprospecting world, it is not clear how exactly knowledge produced in La Selva is contributing to moral progress within the Costa Rican place. This is so because OTS has not established strong mechanisms to share sophisticated ecological knowledge with lay people in Costa Rica. As it is right now,

[92] For a review of OTS's intellectual contributions to conservation efforts in Costa Rica see Evans (1997, pp. 27-30).

scientists working at the station publish almost exclusively in academic journals or rather expensive specialized volumes. By the same token, OTS itself restricts its efforts to disseminate knowledge to editing specialized books, PR material like calendars and baseball caps, and publishing on-line data bases, which in the case of digital maps, need to be paid for if desired in-print.

In addition, La Selva leases rooms – at very high prices for Costa Rican standards – to nonacademic visitors during low season predominantly. Granted that knowledge can be physically shared outside of OTS borders, but even if its 'Central American offices' are located at the UCR campus, the interaction between both institutions is very restricted and rather formal – a dozen scholarships a year for UCR students is insignificant. Thus, scientific knowledge generated in La Selva is not readily made accessible to all sectors of society. What about elementary schools and high-schools around the country? In Costa Rica there are very few people who have actually walked through a primary tropical forest or heard, least seen a wild hog. The OTS itself runs another biological station at the Palo Verde National Park and the largest living collection of plants in Costa Rica, at Las Cruces Biological Station and Wilson Botanical Garden, which only a few privileged Costa Ricans have even heard of. Even though there is evidence that in the past OTS has been active in promoting outreach activities in the communities surrounding its biological stations, it does not seem that it has extended these efforts to the rest of the country (Brown 1990, pp.17-9). In fact for an average observer it is very easy to understand that OTS's interaction

with the community is not that well nurtured. This is revealed by the looks and physical condition of a dismantled garbage-bin placed at the main bus station serving La Selva, which is located one kilometer away from its campus. Displaying a faded OTS logo on it – to reveal who sponsored it – surrounded by a mound of waste, this stained metallic bin – sitting on such a representative location – could very well be taken as a metaphor for the institution's commitment to foster ecological awareness among the Costa Rican community, if taken cynically; or else should at least be taken as an invitation to seriously question its sincerity.

Intrinsic geographic judgments compel academic institutions as the OTS to play a larger role in the dissemination of ecological knowledge around the world and in Costa Rica specifically. In order to do so they have to move beyond mainly PR efforts in the form of in-kind research scholarships, calendars, scientific publications and other merchandise that can only be purchased by the wealthy or specialized. The imperative of making knowledge available to as diverse an audience as possible beckons institutions like the OTS to use the tools available to them to foster an environmental culture on which its own long-term existence depends.

La Selva is not the only research station in Costa Rica. In fact, there are several other, some are managed by national institutions like the University of Costa Rica and others by American universities or research centers like the School for Field Studies, Texas Christian University and the University of Georgia. Others are actually run by

Costa Rican entrepreneurs, like the Monteverde Biological Station, who lease them to institutions that use them to conduct research or other academic activities. However, with the exception of the world-famous Monteverde Reserve owned by the Tropical Science Center (CCT) and the stations owned by public universities, few of them own as much prime-ecological land as La Selva.[93] As a consequence, the production of knowledge derived from biodiversity in Costa Rica, has generally required the collaboration between research institutions and the system of protected areas (SINAC). That is why INBio spends so much effort and money to guarantee its privileged access to the resources found in the protected areas. In fact, as it is, the Area de Conservación Guanacaste (ACG) is the conservation area where the most research permits are issued on a yearly basis (about 60 percent of research permits issued by MINAE). This is so because the ACG is the conservation area where INBio is conducting the most amount of research, in collaboration, among others with Daniel Janzen, (MINAE-SINAC 2006, p.51; Morell 1999b, pp.83-4).

Following Daniel Janzen's description (1999), the Tropical Science Center and the Organization for Tropical Studies, as well as Costa Rica's protected areas, have the chance to become 'green freezers' where ecological and taxonomic information is generated and classified in place and made available to the public. So if a researcher

[93] The OTS reserve is connected to Braulio Carrillo through a biological corridor that include ranges in elevation from almost 3000 meters above sea level to 35, protecting many life zones and a great number of life-forms that depend on this migratory pathway for subsistence. The reserve protects both old-growth forests as well as secondary patches and regeneration plots, in total this field station houses an estimated 1,850 species of plants, 350 species of trees, 448 species of birds, and approximated 500 species of ants.

at La Selva wants to find a living sample of a specimen she found in a book at the station's library, she just needs to walk out to the forest and find it. On the other hand institutions like INBio, the University of Costa Rica, and the Museo Nacional – National Museum, MN – generally work as 'brown freezers'. Thus, they tend to classify information – i.e., knowledge – in databases and collections which are kept away from the actual ecosystems that generated them. These characteristics are relevant as they allow or constrain different ways of making knowledge available to the public. However, as expected, these are subject to controversies, such as between the Museo Nacional and INBio regarding the control and management of taxonomic collections. Yet it is not the purpose of this chapter to navigate those instrumental discussions, rather we are concerned with clarifying the role that these 'freezers' ought to play in advancing intrinsic progress.

The case of INBio is in fact a good example of a place which can be used to illustrate alternative ways to distribute knowledge beyond the publication of scientific literature, as revealed by geographic judgment. As an effort to diversify its sources of income, INBio constructed INBio Park just next to its main facilities in 2000. This 'biodiversity park' as it calls itself, also serves the purpose of showing the public what INBio actually does, what it understands for biodiversity, and why it is important for society to conserve it. As such it combines elements characteristic of interactive museums as well as three recreated ecosystems native to Costa Rica: a tropical wet-forest, a tropical dry-forest, and a pre-mountain forest – like the one

existing in the Central Valley before it was wiped-off by agriculture and urbanization. It also houses an artificial lake with some appropriate species, a greenhouse to keep butterflies, a vegetable and herb garden, a 'traditional' animal farm and a no-walls amphitheater.

First, and foremost, for the visitor carrying a tight budget, INBio Park could be a disappointment since the prices are relatively expensive to encourage regular visits ($5 for resident adults, $4 students, $3.5 children; $23 for nonresident adults, $17 students, $13 children). Likewise, for the privileged visitor that manages to get in and is looking for taxonomic collections of bugs and strange plants, it is also a disappointment. Just a tiny sample of what INBio stores in its 'brown freezer' are available for display – unless you want to pay an extra price to see the actual taxonomic laboratories where they house the collections. For the visitor that comes to the Park looking for an adventure in the forest it is also a disappointment, given the fact that these 'forests' are actually well-kept gardens crisscrossed by 10 feet wide 'trails' that can allocate a small car. The lake itself is relatively natural-looking and the free roaming bird, reptile and fish species living in it are quite a nice surprise for the visitor tired of staring at caged snakes, frogs and tarantulas. In addition, the lake's waters are kept fresh by an artificial waterfall springing from a well sponsored by the Costa Rican Water Works Institute. For the curious urbanite not accustomed to the sight of an orchid or a vegetable garden, nor well versed with the physiology of a papaya tree or the looks of the plant that produces bananas, the visit can be very

educational. But for the urbanite that has never stepped on a Costa Rican animal farm it is rather misleading since the animals held there and the ways they are kept are rather odd for Costa Rican rural life.

So, why did I say that INBio, and specifically INBio Park, is actually an example of a place for knowledge-generation and diffusion that points in the right direction as beckoned by geographic judgments? To start from the basics, it is an attempt to reach out, to make the knowledge accumulated in the brown freezer available to society through user-friendly means. To use the words of INBio president and founder, it is a 'bioalphabetization' (or bioliteracy) effort (Gámez 2007). Rather primitive I would say, but it is a good start. In spite of its looks, which make the visitor feel inside of biodiversity-Disneyland with colorful brochures and caricaturized signs of tropical flora and fauna, the park gets the word out about the fact that human beings are still very dependent on nature. That our drugs, foods and chemicals still come mainly from nature's gifts. In a society that has been almost totally detached from nature it is important that we re-learn to value it, for its intrinsic appeal and for its uses. Even though walking through the trails of INBio Park does not make one feel like 'one-with-nature' and as insignificant and vulnerable as one does when one needs to take a detour to avoid a fallen giant tree blocking a trail in La Selva or Corcovado National Park, you get the chance to give a closer look to a bromelia, a rare orchid, a crocodile, an endangered *Guayacán* tree or a beautiful snake. For children living in neighborhoods where often trees or plants are not present at all, this is already a lot.

But perhaps the most important geographic contribution offered by INBio Park is its less valued one, namely the orchard and garden. Why? Because it effectively communicates the message that nature is more than just 'natural forests' whose ecosystems are labeled with complex names, but rather nature is also the everyday carrots, the fruits, the onions, the medicinal herbs, the food dyes, the bananas, the coffee and the milk. Hence INBio acknowledges the great amount of biodiversity that we store in our house freezers with the greatest indifference. And why not?, perhaps as Pollan (2006) convincingly put it, it is precisely there where we need to start if we wish to build a truly environmental culture, with nature where it is closest to us, in our gardens, in our bodies, in our kitchens, and in the dirt we step on. Often bioliteracy is conflated with the dissemination of frequently fragmented scientific knowledge about nature: the names of the organs, the stones, the different scientific names given to protozoa and to the parts of a human cell. But as many other abstractions and simplifications of reality scientific knowledge is also fragmented from its context and often abstracted from our realities. It turns out that ecology is more than taxonomic labels and microscopic parts. Ecological processes need to be studied and understood in context – ecological and social.

Therein lays the root of the challenge, or rather, the failure that educators have faced when teaching ecology in our schools (González 2001; Sánchez 2001). In order for a country to develop a true culture of ecological awareness, citizens need to become aware of the relationship between attitudes towards the environment, the social and

productive practices they support and their respective socioecological implications. Hence ecology should be taught not only by biologists but also by physical education, history and social studies teachers both at school and on the field, the parents in the kitchen, the policeman at city park and the farmer at the market. Therein also lay some of the limitations and possibilities for social progress fueled by the INBio model, of brown freezers and green ones, and of educational places like INBio Park and others like city parks, rivers, farms, kitchens and gardens, not yet conceived as such.

This however should not be taken to mean that so-called environmental education ought to be delegated to private hands. It is true that NGO's like INBio and Fundecor (PEN 2007, p.249) have been very instrumental in implementing educational programs that make up for the lack of capacity (or rather, lack of interest) on the hands of the Ministry of Education (MEP) to train teachers to use open classrooms, artistic expression, and field trips as educational tools. Nonetheless, by no means should we allow for the further transformation of environmental education into a tradable service. In other words, an educational program for fostering ecological awareness needs to be a public service (and right), accessible to all and not restricted to those that can either afford the fees charged by INBio or are able to find a sponsor to cover those charges.[94]

[94] Fees can range anywhere from 5$ to $20 per person for an educational workshop, or $12 for a visit to its work-units (brown freezers).

Intrinsic geographic judgment beckons INBio and other research and educational institutions to fully participate in the advancement of human awareness as their ultimate goal. Within this quest, nongovernmental institutions and university departments mainly devoted to the research of nature have a key role to play in fostering the ecological understanding needed to move in this direction, by training critical educators and open its facilities for educational purposes. As INBio, OTS, the Tropical Science Center, the biology departments at the University of Costa Rican and Universidad Nacional, face the challenge to expand their role in society beyond the advancement and legitimation of conservation efforts, they are also compelled to further diversify their research methodologies and their outreach strategies in order to further become relevant actors in the shaping of a better Costa Rican place.

As these institutions turn their face towards the farm and orchard, the river lake and the well-spring, the city park and the garden, they also open a great deal of opportunities for fueling progress in ecologically responsible ways. Among them, an intensified collaboration with state institutions and nongovernmental organizations in a country wide effort to increase awareness of the consequences of the ways we live today – as demonstrated by an incipient effort to reinvigorate the La Sabana Metropolitan Park in San José, with help of private and public sponsors and institutions. In the next chapter we will explore further opportunities for progress inspired by existing (and imagined) places devoted to the generation and dissemination of knowledge as informed by geographic criteria that beckon us to

extend and diversify opportunities to participate in the generation and dissemination of knowledge.

But, we cannot continue to the next chapter before quickly retaking one further implication associated with the conflation of truth – that is, our knowledge of reality – with scientific knowledge and information: namely, the tendency to reduce our ways of knowing reality and progress in development to quantifiable indicators or parameters. As a result of this repressive trend, when authorities and institutions seek to measure – i.e., to know – progress towards particular goals within the country's development agenda, they rely almost exclusively on development indicators or the advice of sanctioned experts. Hence, as discussed in Chapters II and III, progress is measured in instrumental ways that cannot but reinforce world views and moral frameworks that emphasize the validity of one single epistemology, scientific knowledge. Thus excluding any other alternative ways of knowing and interpreting reality, and what is even more dangerous, any alternative conceptions of progress that cannot be measured through scientific means.

As explained by Forsyth (2003), scientific knowledge is often heralded as a higher truth because it is deemed to be objective and free from political or psychological biases. Quite the contrary, in the context of market-driven sustainable development, it is very subjective and helps reinforce reductive notions of the good and the desirable that often become obstacles to progress. Specifically speaking about the totalitarian

dominance of neoclassical economic principles in public discussions on development, and about the authority assigned to them given their self-portrayal as 'objective' scientific truths, geographers Richard Peet and Elaine Hartwick (1999, p.57) brilliantly express:

> More than any other social science discipline, economics is unified by a dominant theoretical structure, highly developed, mathematically stated, scientifically conceived, thought and taught as truth, subject only to slight revisions and changes of emphasis within academic and policy circles that reach into the highest echelons of power. Yet, more than other disciplines, economics rests on simplistic assumptions (about human behavior especially) that are taken as given for all time [and places, I add]. Economics develops in an intellectual vacuum of high mathematics and unrealistic models, isolates itself from fundamental critiques, and reaches precarious conclusions which, while they affect everyone, are conspicuously lacking in democratic input. These tendencies in contemporary, neoclassical economics are highly related: it is exactly the policy powerfulness of economics that protects it from having to take criticism seriously; it is exactly the mathematical complexity of economics that precludes popular participation in the construction of economic knowledge. Arguments like these apply with double force to the economics of development, which cries out for participation by those 'being developed'.

In fact these hegemonic tendencies, so eloquently described by Peet and Hartwick, seek to establish free-market ideology and its associated political and cultural artifacts – efficiency, stability, growth, economic and business-oriented reasoning, product marketing, state-of-the-art technology, the scientific method and mathematically-expressed knowledge – as the only real virtues and instruments to be pursued by society. In doing so they threaten to shut down any attempt to activate healthy reflection upon the moral consequences of our on-going place-making agendas, the tools we use to put them in place, and the instruments we use to measure progress in development.

Indeed, market-hegemony, as the Gramscian term implies, has permeated all sectors of Costa Rican society, transcending politics and ideology to include also the great majority of cultural manifestations. Thus, existing debates about the directions we should follow as a country are blatantly manipulated by a sectarian mass media that renders invisible most alternative (sub-altern) cultural, ideological, political and moral tendencies. Sadly, this undesirable process has even reached the Costa Rican Congress where on-going debates over the 'implementation bills' – here on labeled as sister-laws – required to put in place the Central American Free Trade Agreement (CAFTA) are conducted in a 'fast-track' mode. This rather rushed process renders all political dialogue, and even-more-so, any true possibility of improving these key legislations, impossible.

This is particularly worrisome since CAFTA was passed by means of a national referendum, which was decided by about a three percent difference (less than 2 percent of total registered voters). In addition, the political campaign was a clear example of neoliberal hegemony since the media, the government, foreign ambassadors and most of the export-oriented private sector openly supported CAFTA. Thusly, export-oriented companies blatantly posted huge signs claiming that "in this company we support CAFTA". Whereas 'we' meant, owners, employees and customers, and thus blurred the true and expected diversity of opinions one would expect within companies with hundreds, if not thousands, of employees. In addition, thanks to dubious electoral rules, government officials were allowed to participate in

the political campaign. Hence they joined rallies, gave discourses at communities and factories and even promised improvements in several neighborhoods provided CAFTA was approved. In fact, this irresponsible behavior was carried out to the extent that the Costa Rican Vice President, Kevin Casas, had to resign his position due to the fact that in a Memo to the President he – Casas and Fernando Sánchez, a congressman related to the President – blatantly designed a strategy to 'go around' electoral regulations to further promote the free-trade agreement. This strategy included illegal means such as coercion against public officials and "instauration of fear" among the population (Casas and Sánchez 2007, pp.4-5).

By the same token, even if prohibited by law, the U.S. ambassador actively 'encouraged' Costa Ricans to vote in favor of CAFTA, visited factories and gave interviews to journalists who happily disseminated his partisan message in favor of free-trade. Lastly, the mass media openly supported the government in its efforts to pass CAFTA. They carried this effort to the extent of ignoring rules against the diffusion of political materials during the three-day truce before voting-day, and publishing front-page headlines and irresponsibly paraphrasing the ill-intended words of Costa Rican President Oscar Arias Sánchez: "To reject CAFTA is a synonym of mass-suicide" (Al Día, October 4 2007, underline added).

After approval of CAFTA on October 7th 2007, public attention turned to the congressional debates on the CAFTA sister-laws, and hence many politically

informed people – myself among them – started to visit congress to both oppose the sister-laws and demand the resignation of the congressman – Fernando Sánchez – who, together with the Vice-President, designed the illegal strategy to promote CAFTA. It turns out that thanks to an old democratic tradition, any Costa Rican can attend these debates sitting on benches, called 'bars', separated from the representatives by thick, bullet-proof glass walls. In spite of this, I would say necessary safety-measure, citizens' cheers, applause, and demands were still vaguely heard from the inside, but more importantly, citizens could be seen. Thus it was customary for attendants to bring signs with support or rejection messages for the congressmen or women and the particular laws being discussed.

However, given the insistence and the intensity of the messages displayed by the public – some of them, but not the majority, relatively disrespectful, several representatives got carried-out and started posting their own messages on the glass from the inside; and another one, Olivier Jimenez, disturbed by the fact that a group of women insisted on the resignation of his colleague Fernando Sánchez, suggested that: "those women standing on the bars should instead be praying at home or looking for jobs on the street" (Diario Extra, October 19 2007, p.4A).

Clearly then the current political environment is not conductive to dialogue, nor even, or perhaps, even less-so, in Congress. But things got even worse. Within a few days after the described incident the President of the Congress had the glass-wall dividing

the bars from their representatives stained, the wooden floors removed – used by visitors to make noise – and all windows illuminating these section to be darkened. Hence, the bars became an artificially illuminated, air-conditioned place, isolated from the pedestrians outside, who used to be able to hear the cheers coming from the bars, and the representatives inside. But more importantly, congress(wo)men no longer have to either worry about reading citizens' messages, or about looking at their faces. In other words, these politicians no longer have to stare at their constituents in the eye. As a result, Costa Rican society has lost a place for communication between constituents and their representatives, instead transforming it into a one-way phone cabin. Whereas representatives can be heard on radio or seen on TV, citizens and their messages have been further removed from the public scene. This level of opacity has been justified as a measure to render the Congress more suitable for congress(wo)men's work, nevertheless, it has blatantly reduced the representatives' accountability for their actions, since now they are spared the shame of reading things like: "Sanchez go home" (referring to the representative that many believe should have resigned together with the vice president). Whereas the reduction of noise coming from the bars into congress would have been sufficient to make the place more conductive to dialogue, the staining of the glass-walls alienates congress(wo)men from their constituents and thus renders this place less conductive to intrinsic progress.

To make things worse, mass media continues to minimize any attempts to trigger an intrinsic dialogue in congress about key questions raised by these CAFTA sister-laws. In fact, one of these projects is UPOV 91 (International Convention for the Protection of New Varieties of Plants), which has been rejected twice by previous legislatures, but is now blindly supported by a congressional majority that avoids to face the criticisms their own parties have raised against it in the past. Thus, when reporting on the characteristics and implications of UPOV 91, the country's main newspaper, and the only one with a national audience giving it any sort of semiserious coverage, failed to even mention any of the criticisms against this law, so overtly expressed by environmentalists and opposing congress(wo)men, while also failing to report on the fact that this project had already been rejected twice (La Nación Online, March 1 2007).

Likewise, in regards to the discussion in Congress of the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure ('Budapest Treaty'), another CAFTA sister-law, this same newspaper reported "Approval of Budapest Treaty delayed by discussion about microorganisms" (La Nación, January 28 2008, p.18A, underline added). This headline reveals that the underlying purpose of the article was to convey the message that the forthcoming approval of the treaty was being held-back by unimportant discussions on apparently insignificant microorganisms, rather than to inform the reader about the implications of the subject matter under discussion. A very important topic indeed, since representatives and organizations opposing the treaty have well-

founded concerns about the lack of a concrete definition of microorganism given in its text. As succinctly expressed by the University of Costa Rica's Board of Regents, upon obligatory consultation by Congress (Consejo Universitario UCR 2006, pp.1-2, personal translation):

> "The patenting of microorganisms and of life-matter in general, has been a much debated topic worldwide. Its contents [the debate's] has been highly controversial and it has awakened deep arguments elaborated from perspectives that range from the technical to the economic and social, and even into the moral, philosophical and religious perspectives […] The treaty does not define the term 'microorganism', which gives room for differing interpretations according to each contracting party's point of view. Likewise, there is a great, unresolved debate […] centered on defining whether these [microorganisms] are inventions or discoveries. The treaty does not contribute to this debate; rather it fosters ambiguity since it lacks a precise definition of the term."

In harmony with the concerns expressed by the University of Costa Rica, critics and lawmakers want the text to provide a more explicit definition of what it considers a microorganism, in order to guarantee that neither human life nor other higher life-forms like plants, animals and fungi may be subject to property rights. In addition there is a desire to include provisions to guarantee access by third parties – i.e., beyond patent offices, depositors of organisms and solicitors of patents – to the patented and deposited microorganisms. This is important given the fact that the agreement does not provide unifying guidelines to bridge differences in the scope of patent rights among countries.

Regardless of the significant obstacles silencing these criticisms, the position held by the official voice of the University of Costa Rica stands as a reminder that there is a diverse and multitudinous group of individuals and civil organizations that promote

alternative place-making agendas to the one informed solely by neoliberal ideology. These actors share a common rejection of the monopolization of truth by the existing milieu, in the form of reductive definitions of human well-being, social progress and human-nature relationships.

However, in contrast to the more concrete agenda of free-market ideologists and policy makers, this group is characterized by a pluralism of interests and perspectives. As a consequence, members of this group often find that their points of view often contradict, or cancel-out each other given the menagerie of virtues they defend, while avoiding direct engagement with often undisclosed but important questions: should justice be the preservation of pristine nature instead of the tradition of indigenous peoples and peasants? Or should it rather be the forwarding of gender equity and the practice of organic agriculture? Should it incorporate the need for local governance and control of drinking water and protected areas? Or shall it instead compel us to defend the rights of whales and sharks? Or should justice include all of the above emphases? This diversity in concerns and interests is not properly articulated by a coherent moral framework that shows the empirical and moral threads that link and render as inseparable issues of social justice and issues of ecological justice, and thus threatens to emphasize sectarian definitions of justice and truth that can only serve the agendas of each individual group and not of society as a whole.

Nonetheless, these internal contradictions, by no means, invalidate the moral arguments defended by these 'relativists', rather, they call to our attention that there is a present need for progressive groups to develop notions of justice and truth that effectively guide what should be the role of the natural realm, its governance and use by society, in forwarding a more just, and why not, fraternal society. Yet, given the lack of a unifying, but open-ended, moral theory that bridges the virtues of the natural, truth and justice, these movements still remain shy of envisioning coherent means to measure progress in nonrelativistic ways. Likewise, they are still struggling to envision an alternative spatial organization to support places that would better advance their goals. As a consequence, as important as their critique may be, they still remain short of formulating unified and concrete place-based solutions that truly draw on their geographic and moral imagination and thus would effectively put them in place.[95]

In tune with the premise that intrinsic progress relies on the diversification of perspectives that inform our place-making endeavors, the geographic alternatives developed in next chapter will be informed by points of view that transcend the virtues inspired by neoliberal rationalizations. These will include a conviction, supported by geographic moral theory, that the pursue of truth relies on extending and diversifying opportunities to have access to the generation and dissemination of

[95] Ironically, this limitation is perhaps the greatest strength fueling the place-transformations inspired by market-environmentalist's ideas as revealed by the clarity and articulation of, for example, Mr. Boza's proposal (2005).

knowledge (be it scientific, indigenous, empirical or what-so-ever), and thus it constitutes an unspoken and essential human right. As our place-making efforts help us diversify participation in the construction of truth, they will also be instrumental in facilitating new conceptions of progress and ways to determine it.

The following chapter draws inspiration in the many alternatives suggested by the moral critique opposed against neoliberal dogmatism. It seeks to be a geographic contribution towards converting what David Harvey (2000) called "spaces of hope" in actual places of progress. But then again it assumes that the more perspectives are engaged in this effort the better the result is going to be. Hence these proposals are not written on stone, they are contributions to feed such a dialogue.

VI. INTRINSIC DEVELOPMENT – PLACES OF PROGRESS

As stated in the conclusion of Chapter V, this chapter intends to be a contribution to move place-making in Costa Rica beyond the directions dictated by uncritically assumed and often dogmatic ideas of progress. As such it fulfills this dissertation's objective to help elaborate place-based alternatives that would help improve the Costa Rican reality. Hence it reinforces the claim that studies of development ought to take a critical assessment of the reality they study. Yet this chapter does not seek to knock down place-making initiatives but rather to build up on existing ones. It takes the good as an ever receding horizon and hence it compels us to take this and other proposals for progress as food for thought and ideally, to guide political action as well.

In Costa Rica there already exist important – often overlooked – political initiatives that draw on the experience of a diversity of actors and organizations actually involved in the every day construction of a different Costa Rica. These include universities, research institutions, political parties, private companies, conservation NGOs, community associations and their leaders, development agencies and government institutions. This chapter draws on many of their suggestions – and some of my own – to elaborate a tentative place-making agenda towards intrinsic progress. Such an agenda will be supported by a moral framework that expands the virtue of justice, generally understood as social justice, to include also guidelines as for how human agency ought to weave elements of the realm of nature in place.

In order to do so, this framework draws on qualities of the good highlighted by geography, which Robert Sack calls intrinsic geographic judgments. As shown in Chapter V, intrinsic geographic judgments can help us clarify the moral and empirical contributions of existing places and the agendas that shape them. But in doing so, they also compel us to formulate alternatives for progress that shape reality in ways that are good and desirable. Explicitly this means geographic judgments envision – and can help us create – a reality composed of places that increase its complexity and diversity, while also increasing our capacity to be aware of the implications of our actions. By achieving progress in transforming reality in this direction we improve it intrinsically and also increase the chances for human beings to act as responsible moral actors.

In the context of development, understood as a place-making endeavor, intrinsic geographic judgments help us clarify the moral issues at stake behind often controversial questions raised by the challenge of redefining our relationship with the natural realm (and with ourselves). They highlight the fact that the natural and social realms are mutually constitutive and thus cannot be artificially separated in place. Hence, place-making agendas that blur our capacity to see the threads linking the human and nonhuman led processes of change are not desirable. Places that foster and preserve the diversity of life and landscapes are good, yet this diversity needs to be checked by the geographic virtue of 'seeing-through to the real'. In other words,

human beings need to make sense of diversity and complexity, not be overwhelmed or alienated by them. Nevertheless, our efforts to understand and use nature in its full complexity shall not be detrimental to diversity itself. Instead, we are compelled to enhance diversity in the nonhuman world since it is intrinsically and instrumentally good to do so – a more complex world encourages human curiosity and imagination, while also enhancing quality of life and improving our chances for survival.

Thus, places and activities devoted to conserving, knowing and using nature are not to become ends of their own means. Our place-making agendas need to expand the instrumental use-value of nature beyond mere material and intellectual accumulation to include also its potential to nurture our critical awareness of the conditions of our existence, and our possibilities to improve our quality of life, while also nurturing and respecting all other expressions of nature that we may not have made sense of yet.

As a consequence, intrinsic geographic judgments compel us to go beyond Manichean views of reality that force us to chose between conservation of environmental quality and preservation of economic growth, or say, preservation of indigenous cultures. Instead, geography reminds us that economic growth alone (or the conservation of nature and/or culture) cannot be the only value(s) informing our place-making mechanisms. Rather society should seek to generate material and conceptual places that keep them in check. A world dominated by places devoted solely to producing income would be a dull one, by the same token, a world full of

'wildlife areas' could not support the existing population, and a world constituted of places empty of traditions and cultural heritage would be homogenous and uninteresting.

Moreover, intrinsic geographic judgments remind us that our efforts in constructing this hybrid (cultural/natural) landscapes need also be informed by conceptions of justice that compel us to create places that facilitate access to the gifts of nature, and derived material benefits, to as many people as possible. Human suffering, hunger and violence hinder our capacity to act as responsible beings and rather force upon us a struggle for survival. Diversity in human experiences needs to be enhanced as long as it does not challenge our capacity to be fully aware of reality and does not diminish our opportunities to participate in the transformation of that same reality.

Hence, as long as material inequalities persist, access to the gifts of – and derived from – nature needs to be a regulated right, not a payable privilege. Some rights like access to recreation and opportunities for social mobility should be as direct as possible, while others like access to material gains (from ecotourism or a PES program) may be indirect and facilitated by distributive political-economic policies.

Finally, the geographic virtues of diversity, access to, and awareness of, reality also compel us to reformulate our understandings of the virtue of truth. When combined in place, intrinsic geographic judgments emphasize that places of progress construct the

virtue of truth as expanded critical awareness in the form of geographically contextualized knowledge, rather than abstract accumulation of information. As discussed above, and emphasized by authors such as Pollan (2006), critical awareness of our place in nature as socioecological beings is a first and necessary step towards the intrinsic validation of nature and thus towards an effective environmental culture. It is reasonable to expect that as a society develops an intrinsic appreciation of nature, efforts to conserve its diversity would be increasingly 'natural' and thus politically and financially viable. Hence, if we follow with this dissertation's claim that development efforts are also aims to progress in place-making, then it makes sense to affirm that the more our place-making activities are informed by mutually constitutive intrinsic goals such as 'increased ecological awareness' and 'enhanced complexity and variety', the better our development agendas would be.

If we take the above-listed premises earnestly, we are obliged to formulate alternative paths for progress that take the existing Costa Rican reality as a starting point. Many of these places for progress, their meanings and in-and-out-of place rules devised hereby arise also from already existing initiatives. Therefore, it is not my purpose to present them as original, but rather to articulate such contributions with the help of the geographic guidelines mentioned above. This articulation will have three interrelated, mutually reinforcing elements: a) it suggests new places and in-and-out of place rules for improving the existing network of places devoted to the conservation of natural diversity in Costa Rica; b) it considers potential uses of nature

that would reinforce qualities of the good highlighted by geography; and c) it suggests mechanisms to articulate all of the above in a national place-making strategy that fosters critical awareness among Costa Ricans and its visitors, while also seeking to enhance and conserve the complexity and diversity of the Costa Rican place.

VIa. Towards a Territorial Organization that Supports Places of Progress

Most important in achieving intrinsic progress within Costa Rican territorial organization is a redefinition of meanings and uses of existing places and their role in conserving and enhancing natural diversity and ecological awareness. In many ways though, this redefinition has already been suggested by the 1998 Biodiversity Law (No. 7788), which listed among its main objectives to "promote education and public awareness about conservation and biodiversity"; and to "integrate conservation and the sustainable use of biodiversity in the development of sociocultural, economic, and environmental policies" (Article10).[96] Still, these objectives fall short from truly elaborating the specific ways in which the country's territorial organization would become instrumental in forwarding them, and needless to say, these aims have mainly remained on paper, as shown by the rather poor outreach programs ran by Ministry of the Environment (MINAE), public schools and the National System of Conservation Areas (SINAC) (González 2001; Sánchez 2001; MINAE-SINAC 2006, pp.69-83).

[96] Herein it is also important to remind the reader that the aim of developing awareness about the importance of biodiversity is much more fragmented and narrow in scope than the intrinsic goal promoted in this dissertation that argues for fostering ecological awareness, which goes beyond the comprehension of the utilitarian value attached to the diversity of life both in the Biodiversity Law and in its intellectual source, the Convention for Biological Diversity (CBD). For a discussion on the relatively narrow (utilitarian) focus of the CBD and the concept of biodiversity as a whole see Escobar (1995, pp. 199-206).

Along with these imperatives, we suggest hereby that state-owned protected areas (ASPs) need to be rearranged as part of a newly defined set of management schemes according to newly assigned roles within the Costa Rican system of places. The following section proposes a reorganization of ASPs into 3 different management schemes labeled according to the degree of porosity of their borders (in regards to human activities allowed): open, intermediate, and restricted areas.

Open Areas or 'Parks for Tourism and Recreation': The main purpose of these 'open' areas will be to augment the frequency and quality of interaction between people and nonurbanized landscapes. As such these areas would make investments in increasing the number and extension of trails, camping, picnicking and other services to attract visitors. These areas will operate or contract out public transportation services that link them directly to important urban areas while also guaranteeing that entrance prices are affordable by as many citizens as possible – residents under 18 will enter free to all open and intermediate areas. In addition, differentiated fees will be charged according to the kinds of activities pursued: picnicking, fishing, camping, swimming, hiking, etc. A percentage of the entrance fee paid by tourists will be devoted to fund outreach activities and to provide necessary infrastructure to perform them.

Indeed, ASPs designated as 'open' will have active outreach programs that will go beyond their immediate communities and reach out to cover their whole SINAC

conservation area. Outreach activities will include workshops at schools, ecoliteracy seminars for school teachers, hiking and camping tours for schools and high-schools. Workshops, seminars and outdoors tours will be lead both by park rangers but also by school teachers and volunteers from the volunteer association (ASVO) and Ministry of Environment employees. Each open area will have facilities to house volunteers and yearly operational plans to recruit new helpers among high-school students and graduates to efficiently engage them in the improvement of the park's maintenance and outreach activities. Independent environmental education programs like the one conducted by the NGO Fundecor should continue to receive support by the Ministry of the Environment (MINAE) and the Ministry of Education (PEN 2007, p.249). Nevertheless, they should not be seen as substitutes for an integrated public environmental educational campaign. Rather such a campaign should be articulated as a central element of the country's conservation strategy. In order to do so, it should draw on protected and other recreational areas (see below) as permanent educational tools to be considered when designing educational programs, and in the training of future educators and MINAE-SINAC personnel.

The parks that would fall under the 'open areas' category would include the most visited protected areas: Volcán Poás, Manuel Antonio, Volcán Irazú, Cahuita, which in 2005 accounted for 69 percent of national visits and 63 percent of visits to ASPs by foreigners (MINAE-SINAC 2006). In addition to these areas, other ASPs with large potential to receive visitors, given their geographic location and possibility to protect

ecologically sensible ecosystems, would be added to the list. Every existing SINAC conservation area will have at least one ASP designated as an open area.

Intermediate or 'Parks for Mixed Uses': These will include those protected areas whose current visitation is mainly seasonal – peaks during the dry season – and whose existing uses by visitors are more restricted – occasional camping, sporadic hiking, picnicking and swimming at the beach. Public access to these parks is very important since they provide a diversity of scenic landscapes, biodiversity and climates for national and international tourists not necessarily offered by open areas. However, these parks will have a double purpose as they will also devote the larger proportion of their territory for research and 'preservation' activities. Hence, extreme care needs to be taken to maintain and expand facilities to allocate high demands during peak weeks. Still, research activities will emphasize projects that seek to understand the nature and impacts of nature-society interactions, carrying capacities, adaptive management and the sort, i.e. applied ecology/biology. Findings generated in these areas would be instrumental in updating management schemes and ecoalphabetization curricula around the country.

Outreach activities in these areas can focus on but shall not be restricted to the immediate communities surrounding them. A more intense effort needs to be done to encourage field researchers and park rangers to train locals as parataxonomists and ecoeducators. Week-long trips by school, high-school and college age youngsters

coming from far away towns will be encouraged as educational experiences. These areas should also be in active communication with ASVO to guarantee that volunteers can offer their services on demand.

The ASPs falling under this classification would include: Santa Rosa, Rincón de la Vieja, Tortuguero, and Arenal, among others. Efforts will be made so that each SINAC conservation area includes at least one intermediate park so that visitors can have a biogeographically diverse offer.

Restricted Areas 'Research and Preservation Plots': These protected areas would include those ASPs, or portions of mixed-use ones, which due to their remoteness or topography are of difficult access to humans. In addition these would include those protected areas or portions of them that protect highly threatened ecosystems or those in which even the regulated presence of humans can be demonstrated to threaten the habitats of endangered species. These would include the remote sections of the Parque International la Amistad (neighboring with Panama), Corcovado National Park and Tortuguero National Park. In addition, this classification will also include all areas currently managed under the 'protection area' management category and devoted mainly to the protection of springs.

Therefore, under this spatial organization, the protection of water ways and springs will be as high a priority as the preservation of forests or ecosystems within absolute

reserves. Still, given the fact that many of these springs and water bodies are close to population centers, and given their importance in sustaining human life, they ought to be used as educational tools as intensively as possible. With the exception of 'water protection areas', restricted areas would mainly be 'research plots' devoted to knowledge generation/reproduction of both applied and non-applied scientific knowledge generation. As such, entrance to these areas will be restricted mainly to researchers and SINAC/MINAE personnel.

Budgeting and other Management Guidelines: The Costa Rican government currently owes around $55 million to landowners whose lands are within protected area limits – about 11 percent of lands within National Parks and Biological Reserves and 21 percent of all other protected areas. Efforts to compensate users for these lands accounted for about 17 percent of SINAC's annual budget in 2005. [97] Therefore, expropriation of private lands enclosed within protected areas needs to follow established priorities: Firstly, all private lands within open areas and open to the public within mixed-use areas should be paid to their current owners. As such current efforts made to pay private lands within Manuel Antonio National Park are to be applauded. Secondly, ASPs currently included under the 'forestry reserve' or 'protection area' category need to be evaluated to determine their relevance to the conservation guidelines stated hereby. Those private areas that protect springs should

[97] My own estimates derived from data provided by Adamson (2006a, p. 9) and MINAE-SINAC (2006, p.14). For a financial analysis of the significance of these payments in guaranteeing/threatening the stability of the system of protected areas see Adamson (2006a,b).

be expropriated as soon as possible, and those which are just restricted to particular land uses should be either released from this restriction or purchased from their current owners. All others would follow a chronological order according to each ASPs date of creation.

Lastly, special expansion programs need to be conducted to follow the example of the Guanacaste Conservation Area, where many lands have been annexed to existing protected areas in spite of the fact that they are not considered of 'prime ecological value' (Morell 1999b, pp.83-4). That means the purchase of lands for conservation purposes need not be restricted to so-called pristine areas, or even secondary growth areas, but rather should be opened to lands in all states of ecological conditions and degrees of human intervention. As demonstrated by conservation initiatives conducted in the Guanacaste Conservation Area, there is also a lot to gain –in economic, ecological, social and educational terms – by establishing protected areas devoted to ecological restoration, which can in the midterm become important habitats and migration corridors for wildlife.

Economic revenues generated by open and mixed-use areas would continue to subsidize maintenance costs from less visited ASPs. The income generated from the newly defined tourist tax charged at hotels should first be used to expropriate private lands as specified above. Once this process is completed, tax revenues should be devoted to cover the cost of developing and maintaining facilities to receive visitors,

and to support the organization of volunteer programs, research projects and outreach activities. Rather than focusing on the repression of illegal poaching practices, park surveillance efforts should be progressively shifted towards ecological awareness. In addition open and mixed-use areas would allow for seasonal hunting, fishing and gathering practices that account for specific cultural traditions, like the selective harvesting of Olive-Ridley turtle eggs allowed in Ostional Wildlife Refugee, and the now-repressed practice of green-turtle hunting in the port city of Limón and Tortuguero National Park (Campbell 2007, pp.320-4). In addition, special care needs to be taken to allocate traditional indigenous practices including regulated extraction of herbs, fungi and wood trees, hunting and fishing.

Commercial uses – beyond artisan exploitation of resources as exemplified by the case of egg-harvesting in Ostional – will continue to be banned from ASPs as established by the National Park Law. However open areas will be allowed to offer cafeteria services as well as souvenir shops, merchandizing and the sort. In the case of Miravalles National Park and other places where the government seeks to exploit thermal energy sources, continued care needs to be taken to not give up scenic beauty. At any rate SINAC needs to be compensated by power companies with three-times the land given up for exploration/production. Oil exploration and exploitation would continue to be banned from ASPs.

In spite of the importance of ASPs in the effort of conserving nature for critical awareness, they would not be the only key elements within a network of places with such aims. As stated several times throughout this dissertation, we need to create places that help us bridge the existing yet artificial gap between the natural and social realms. An important tool in achieving this goal would be so-called agroecological corridors.

Agroecological Corridors: These draw inspiration from already existing initiatives proposed by SINAC and MINAE that seek to provide migration paths for wildlife through a network of 'biological corridors' that would bridge protected areas within the country and amongst Central American nations as well (MINAE-SINAC 1996; PEN 2007, pp.242-5). Though important for its ecological relevance, the establishment of biological of corridors has faced major challenges specially related (but not restricted) to the monetary cost of purchasing lands from their current owners to set aside for conservation and regeneration. In spite of this, a few of these corridors have been successfully established – as evidenced by the world famous corridor joining the Braulio Carrillo National Park and the La Selva Biological Station – and should be further pursued wherever possible. Nevertheless, alongside these efforts, we should seek to develop agroecological corridors that reflect the socioecological reality of the country more effectively.

Such corridors would effectively foster agricultural practices, which would, to a large extent, coexist with and even facilitate the ecological needs of migratory species. These agroecological landscapes would include agricultural practices as agroforestry systems, shade-grown multicrops, timber plantations, integral organic farms and riparian forests. The establishment of these corridors could be encouraged and implemented by means of governmental policies such as a diversified PES program, or with help of tax-based incentives and subsidized loans along the same lines of the incentives included in the Organic Agriculture Law. These elongated places would at the same time foster ecologically mindful productive practices that would be beneficial in improving food-security in the country – in the face of expanding export-oriented agriculture – while also providing a space for participatory learning in the ecological processes involved in the production of food and timber and how these interact with migratory species.

In fact, the recently conceived *Osa Campaign* seems to point in a similar direction and reinforces the idea that agroecological systems have a lot of potential in diversifying and strengthening conservation strategies. The campaign is a private fundraising initiative to fund conservation initiatives in the Osa Peninsula.[98] It enlists the support of Costa Rica's major private conglomerates, political, sportive and intellectual leaders, SINAC-MINAE, and private conservation NGO's such as The Nature Conservancy and Conservation International. Its two fund-raising mechanisms

[98] This landmass is the site where the world-famous Corcovado National Park is located – housing the largest remaining extension of wet tropical forest in the Central American Pacific.

are donations from its partners – about $19 million since 2002, and sale of nontoxic collectible tattoos with designs that portray scarlet macaws, dolphins, whales, a jaguar and a frog. During the first year of this public fund-raising initiative, the campaign was able to raise about $250,000. Taking in consideration that each tattoo is sold at a price of 500 colones – about 1 US dollar, this amount represents about 500,000 tattoos sold, a very important number for a country of 4.3 million inhabitants (Osa Campaign 2008).

Regardless of its success in raising money and my personal concerns about the transparency with which campaign leaders will manage the funds, it is important to highlight that the money will be used to strengthen Corcovado National Park's capacity to protect the wildlife it houses; to buy lands located between Corcovado and other protected areas in the region to be established as biological corridors; and to provide privately subsidized loans for farmers to establish environmentally friendly agricultural practices and/or PES programs. Given the social challenges faced by conservationists in the Osa Peninsula, where peasants still depend on an agrarian cash-crop economy for subsistence, conservationists have realized that such an alternative is probably more realistic than the simple purchase of lands – which would raid peasants off their land and further increase pressure on already protected areas.

On the one hand, the *Osa Campaign* is certainly a good example of how the private sector can help raise awareness among the general public about one of the roles they

could play in conserving natural diversity in the country – monetary contributions. But on the other hand, it does little to truly raise ecological awareness amongst a public which is totally alienated from the reality in Osa, while probably conveying the message that as long as you can devote a few dollars to support 'a good cause', you can green-wash any ecological problem associated with your living conditions or those of others. In other words, the Osa Campaign may be promoting a rather passive preoccupation for a distant, geographically unconnected, and idealized natural environment, rather than endorsing an active development of critical awareness that truly triggers popular reflection upon the conditions that degrade nature near and far. In sum, the *Osa Campaign* seems to be promoting the consumption of nature conservation, rather than a reflection process upon its intrinsic relevance.[99]

Likewise, this campaign is a good premise to reveal how private initiatives can collaborate with public goals and objectives of conservation and management that includes parks, yet go beyond them as well. Nevertheless, this measure would only help solve part of the ecological problems in the Osa Peninsula. There problems transcend those posed by intensive and extensive agriculture to include also the ones related to the sprawl of hotels, swimming pools and vacation homes, which are devastating forests, hills and shores, increasing competition for potable water, forest

[99] This alienating process was recently emulated by a public campaign, sponsored by the media, that encouraged Costa Ricans to vote for the inclusion of the Isla del Coco (Coco's Island) as one of the world's natural wonders. The campaign was echoed by text messages, emails and conversations making it seem like one's moral obligation to support the effort with one's electronic vote, even though few Costa Ricans have actually seen the island, which is located about a day away by boat on the Pacific Ocean.

resources and degrading water-based ecosystems through increased erosion and runoff (Lobo Segura 2007). This shows us that conservation efforts need not only link ASPs to ASPs and include both private and public actors, but they should also include ecologically responsible practices within and around urban and peri-urban areas that influences also the ways tourist and industrial growth reshapes the landscapes they settle in. Along these lines, next section reviews three types of place-making projects that would increase opportunities for raising ecological awareness among the country's population: the establishment of more public recreational parks, the enhancement of urban ecosystems and the creation of linear parks that effectively link cities and towns to agroecological corridors, recreational parks and protected areas.

Recreational Parks: These are areas that offer environmental amenities to citizens who may not need to visit a public protected area to fulfill their desires to be 'close to nature', or who are part of the almost 90 percent of Costa Ricans that do not get a chance to visit a protected area on a yearly basis. In fact, recreational parks are not new to the country and are frequently visited by Costa Ricans particularly during weekends and summer months. Examples of public or semi-public venues located strictly within the Province of Alajuela, or very close to it include:

a) *Los Chorros,* a drinking-water capture zone. Offers secondary forests, waterfalls, picnic areas and clean river pools to middle and low income visitors.

b) *La Laguna de Fraijanes*, a peri-urban park. Offers outdoor-sports facilities, forested picnic areas, playgrounds and a lake with water fowl
c) *Ojo de Agua*, a water park. Offers constructed swimming pools filled with running spring water, varied outdoor-sports facilities and picnic areas
d) *Parque del Agricultor*, an urban park close to Costa Rica's main international airport visited by families that rent horses, picnic, drive bikes and fly kites.

Likewise, if we seek further away from the city of Alajuela, but still within the populous Central Valley, we find parks like *Bosque de la Hoja*, *Monte de la Cruz*, *Paradero Lacustre Charrarra*, and zoos like the *Centro de Conservación de Santa Ana*, the *Simón Bolivar* and *Zoo Ave*. On an average weekend or holiday most of these venues are visited by large crowds seeking affordable outdoors recreation. Nevertheless, as reported by a recent newspaper and affirmed by my own observations, the majority of these places often lack proper funding, maintenance, and the services they offer generally work at full capacity as demand for recreation spaces keeps increasing (La Nación Online, January 31 2007).

Therefore, it should not be a surprise that there is an increasing number of private, for-profit venues that offer urbanites much-needed opportunities for outdoors recreation. These venues concentrate around traditional weekend retreats such as the road heading to Volcan Poás, where *La Laguna de Fraijanes* is also located. Given the long-established custom among inhabitants of the Central Valley to visit the Poás

Volcano area during weekends, it is customary for restaurants to offer a playground for children, a soccer field or beautiful gardens to walk around after lunch. Moreover, there is an increasing number of venues that have expanded the services they offer to include trout fishing ponds and the opportunity to rent a fishing cane, to buy bait, a bucket and the catch – in case you want it grilled on-site. Other venues go beyond fishing ponds to include also canopy tours, picnic areas and hiking trails, as offered by a recently opened park and restaurant conveniently called *Colinas del Poás* (The Hills of Poás). By the same token, sprinkled around the Central Valley there are several plant nurseries that have diversified their activities beyond the very popular sale of ornamental plants, to include also trails and gardening courses.

But the tendency to increase the sophistication (added value) of the amenities offered by weekend retreats includes also the already reviewed INBio Park, as well as the more expensive *Africa Mía* and *Panaca*. Aside from its permanent attractions, INBio Park also offers guided camping tours during the summer – starting at $7 per child, and even classical music concerts with international orchestras. *Africa Mia* in turn is a Bush Gardens-style zoo, located in Liberia, Guanacaste. It charges a $15 dollar entrance fee to adults for the right to see and interact with mainly African fauna. *Panaca* (Natural Park for the Agrarian Culture) in turn, located in San Mateo, Alajuela is a Sea World-style park which offers a wide variety of wild- and farm animals – most of them exotic to Costa Rica. It also offers animal races, shows and traditional foods, and for an extra dollar children can even buy a feeder to nurse a

calf. What is the price charged for this adventure? A local newspaper estimated that a family of 4 would spend $150 dollars for a day at *Panaca*, about the minimum monthly salary in Costa Rica (La Nación, January 20 2008, PROA).

In spite of their often prohibitive prices, the proliferation of such for-profit places as a response to the saturation of existing public or semipublic recreational spaces is by all means welcomed. However it points at two important facts: First, people living in the cities want to go outdoors and knowingly or unknowingly feel attracted to 'wild nature' or its representations; second, there are not enough public or fairly accessible options for middle and low income families. This is particular worrisome since as rampant environmental degradation continues to destroy rivers, beaches and landscapes, and at the same time foreign tourism continues to grow, the demand for existing outdoor recreational opportunities will keep increasing together with the prices charged to access these places. As a result, public and affordable venues cannot serve the increasing numbers of families that wish to go outdoors and cannot afford the prices charged by private entrepreneurs. Indeed, on a trip to any Costa Rican city, one should not be surprised to discover that shopping malls and McDonald's play-grounds – where one does not necessarily have to pay to be entertained, and it does not matter if it's raining outside – have become one of the most popular recreational sites for middle and low income families.

The few existing options for outdoors recreation available to the majority of the population are also threatened by profit-making interests. In the case of *Ojo de Agua*, there have been several proposals to give the management of the park in concession to a private corporation, which has promised to remodel it, and of course, would raise prices to recover its investments. *Los Chorros* in turn is located on private lands, and hence access to the springs is not guaranteed in the long-term, threatening the supply of drinking water for several communities alongside with the ability of many to swim in its clean natural pools. Concerns about the shaky ground of places of this nature are very well-founded as epitomized by the transformations experienced in the place now called *Tabacón Resort*.

Indeed, the Tabacón experience is not unique in the country. A tendency to restrict accesses to rivers and beaches is common-place everywhere you see tourist visitation growing. Following, a few examples I have encountered, or been told about, that could serve to illustrate this trend:

- In Monteverde, Puntarenas a local family charges $8 for access to a waterfall.
- Near the Rincón de la Vieja National Park a family charges $1 per person for granting car access to a road leading to the park.
- In Atenas, Alajuela, access to a road leading to the Los Ángeles waterfall has been closed.

- In Santa Teresa Beach, Puntarenas, unknown people repeatedly place huge rocks on camping grounds to prevent campers to drive their cars up to the camping grounds.
- In San Gerardo de Dota, San José, accesses to the Savegre River are fenced-off throughout its way.

This situation highlights the claim that there must be an active public agenda that effectively secures access to already established recreational areas, such as *Los Chorros*, by purchasing those places and managing them under the proposed open or mixed-use area management categories. In addition, there is a need for creating more recreational places that effectively release the raising pressure imposed on already-existing ones and on the system of protected areas. Finally, it is extremely important that the Ministry of Environment and municipal authorities adopt a proactive stand and actively guarantee public accesses to rivers and beaches. To meet the spirit of the law, these accesses need to be well marked and maintained even before conflict arises. Alternatives to enforce this public right could include the construction and maintenance of beach promenades and the maintenance and restoration of river banks. As in the case of *Los Chorros*, where both a drinking water source and a place for recreation would be protected if purchased by the government, the protection of natural resources need not be exclusionary of people, but rather it should include all of us for the proper appreciation of their full socioecological value.

With that premise in mind, we go back to people and cities to provide a few suggestions as for how they could contribute in transforming the Costa Rican place for the better.

Urban Ecology

The majority of the Costa Rican population lives in cities and from there emerges also the majority of pollution. As these pages are written, the greater portion of human and industrial wastes generated in the Central Valley are dumped into rivers – or what used to be rivers – practically untreated PEN(2007, p.271). Tires, cooking ranges, refrigerators, plastic bags and mattresses are all more likely to be found in the rivers draining cities than fish or wildlife. The Rio Grande de Tárcoles watershed, which drains a great portion of the waste generated in the Central Valley, is one of the most polluted in Latin America, with average fecal contamination counts and other pollution indicators that exceed by far all tolerable limits (PEN 2007, pp.271-2). But the problem does not stop there; this river flushes the pollution down to the ocean – at Playa Azul in the Gulf of Nicoya – leaving traces of trash for miles along the river bank on the ocean shore as well. Fishing, which used to be a great experience in the gulf and the river estuary, is now an unlikely outcome of a boating trip (my own observations).[100] Furthermore, poor monitoring of gas stations and industrial facilities has resulted in pollution of important groundwater resources representing imminent

[100] The problems mentioned in regards to the Grande de Tárcoles watershed are not exclusive to it, but rather reproduced elsewhere in the country; practically every major watershed in the country faces pollution problems of one sort or another, be it chemical, fecal, or any other sort of organic pollution (PEN 2007, pp. 269-278).

health hazards for the population drinking water from these sources (PEN 2006, p.234-5; PEN 2007, p.254; Reynolds-Vargas et al. 2006). Last but not least, solid waste management is on the verge of crisis and frequently collapses in neighborhoods in and out of urban areas. There is a pressing shortage of appropriate places for disposing waste and there seems to be no real progress to effectively develop educational programs that truly help reduce waste generation in the country (PEN 2006, pp.223-6).

In addition the cheap prices of imported cars from the U.S. has given way to an increase in the number of personal gasoline vehicles from 365,900 in 2003 to 417,500 in 2005, about a 13 percent increase. As a consequence, a day trip to San José guarantees the need for a shower upon returning home given the amount of suspended solids in the air, which in some city areas exceeds the acceptable limits established by the World Health Organization (PEN 2006, p.220-3). To make things worse, Costa Ricans seem to have forgotten to leave space for trees. With the exception of very dispersed metropolitan parks like *La Sabana* and *La Paz* in San José; the sporadic one-block-sized islands of greenness in the form of city parks elsewhere; or the beautiful university campuses of the University of Costa Rica and the Universidad Nacional, trees are likely absent protagonists of a walk through the cities of Alajuela, Cartago, Heredia or San José – and increasingly so in other secondary cities. In a way, walking through Alajuela on a hot summer day is more likely to remind one of a walk through a barren city in the Texas Panhandle, than what it actually should be, a

city 10 degrees north from the Equator, i.e., tropical, green, full of colors. When looked from above, say a Google Earth shot, Costa Rican cities bring to mind forests of red roofs and rivers of black asphalt.

In fact, in terms of urban ecology, the twentieth century has successfully transformed Costa Rican cities into bleak concrete monsters (Cruz-Zúñiga 2002). As trees slowly disappear to give place to parking lots, banks and offices, so have the birds and parrots and even mammals that once cheered citizens at dusk and dawn. The past century also eliminated the colonial tradition of building houses around inner gardens and urban growth eliminated traditional backyards and empty lots where plantains, corn, oranges, papayas and chicken used to thrive. Meanwhile insecurity and violence have largely eliminated front yards and replaced them with fences. To make things worse, there remain only a few open soccer fields in the cities since most of them have been fenced and now managed on a profit-based rationale. These fields were in fact the most important place for urban recreation for the majority of children, alongside of public streets that used to be empty of cars.

Hence, the 'green republic' described by Evans (1997) and praised world-wide, is rather gray when one lives in the cities of the central valley, as roughly two thirds of Costa Ricans do (Gómez and Madrigal 2004, p.523): Gray are the waters, gray are the backyards, gray are the roads and gray are often the skies. Indeed the national survey conducted by The Nature Conservancy in 2005 revealed that the three most important

environmental issues as perceived by interviewees in their own communities were: contamination of rivers/groundwater reservoirs, problems associated with poor solid-waste-collection services, and air pollution.

The constraints of a concrete-dominated landscape, high property prices and excess of cars altogether can discourage the most optimist of observers. In spite of these obstacles, recent efforts in cities like San José and Alajuela have clearly made the city friendlier to humans, by building boulevards for the exclusive use of pedestrians and refurbishing parks. Yet the evident absence of trees in these boulevards is numbing as is the fact that children are neither supposed to play on the grass nor climb the trees in the parks. Therefore, it is hard to imagine how these places (cities) could be improved without a drastic cultural change that compels people (and authorities) to create and maintain true spaces for recreation and interaction with nature as well as to adopt lifestyles that help reduce waste, energy use and dependence on cars. Only thus, could one imagine that people would once again be able to fish and swim in urban rivers or be able to enjoy a sunset while listening to a once-abundant diversity of birds.

As indicated above, Costa Rica is in desperate need of urban-rural corridors that effectively link people in the cities to less urbanized landscapes, and why not, even to agroecological corridors, recreational parks or protected areas (ASPs). These could take shape in the form of linear parks, very popular in the U.S. and Europe, that provide safe hiking and biking grounds that would depart from city limits and take

people on scenic trails along restored river banks, and even farms. Linear parks could also be envisioned to link the larger metropolitan parks in San José, as successfully promoted in other Latin American cities like Bogotá. Nevertheless, these public areas would clearly require large financial investments given the distance between parks and the cost of expanding public rights-of-way.

Still thinking about linear parks, given the spatial and financial restrictions existing in cities, perhaps a better option could be to build elongated parks that go out of smaller cities and towns that link them to recreational parks or ASPs passing through agroecological corridors and the sort. Thusly, a city family could take a public bus to such a town and from there on hike or bike through a clearly marked scenic trail. A point of departure to identify potential linear park sites could be the established routes used by mountain-bikers – a popular recreational activity among urban and suburban Costa Ricans. These trails need not necessarily be purchased by the government. Instead they can be established in collaboration with property owners, who as well as those owning property under agroecological regimes, could be compensated by the national government or municipalities for their contributions to the common good (see PES below). In neighborhoods, towns and cities close to rivers and beaches, important investments need to be made to restore accesses and facilitate the use of these places as truly public places. It gives me comfort to acknowledge that some of these ideas – like restoration of river banks near cities and the construction of beach

promenades – are already on the agenda of some municipalities, a shift in mentality that highlights the pressing need and public demand for such changes.

Last but not least, there is a need for further exploiting metropolitan parks like *La Sabana* and *La Paz* in San José, and *El Agricultor* in Alajuela, among others, in order for them to become more than passive hosts of sporadic public activities. Even though there are some existing organized weekend activities in these parks targeted mainly at people seeking to exercise, the municipalities or NGO's managing them need to take a more active role in using its resources as educational tools. They could for example convert these places in green classrooms and even urban-ecology laboratories where traditional farming practices are taught to people of all ages and agroforestry techniques experimented with. Agricultural plots could be established and leased out at symbolic rates to families wishing to farm their own vegetables; or even charity programs could be developed to give people in need the opportunity to grow their own food. In pursuing activities such as summer pond-ecology courses, or soils regeneration and organic composting, urban-plant physiology, children and adults would be more aware of the ecological processes surrounding them and thus be more actively concerned in affecting them in positive ways. Even camping, hiking and bird watching excursions could be organized and partly sponsored by cities. Municipalities could also provide guides for available outdoor activities within the reach of one travel day from the Central Valley, while also providing public transportation to reduce costs.

So far in Costa Rica most urban development has been regulated through the establishment of *Planes Reguladores* (Urban Master Plans), the Urban Planning Law (LPU), the National Regulation for the Control of Urbanizations (RCFU), and the Law of the Maritime-Terrestrial Zone (LZMT). These are basically guidelines that seek to establish zoning criteria for delimiting residential, industrial, agricultural and commercial development. Among the existing norms regulating urban sprawl, there are strict regulations that require developers and municipalities to set aside corresponding portions of land to become so-called 'green areas' and to protect and enhance accesses to rivers, creeks and ocean waters (La Gaceta, March 22 2007, pp.35-44, LOA Articles 28-31; RCFU Arts. II.3, III.3.7; LZMT Arts. 1, 7, 10-2, 23). On paper, these guidelines should already account for the fostering of well-maintained outdoors recreational spaces accessible to everyone. Nevertheless, given the fact that they rely on an artificial premise that conceives reality as discretely divided in rational spatial entities, these norms seldom achieve their goals and are often disregarded by economic interests and municipal authorities them selves. Clearly then, significant progress could be achieved in place-making by establishing more fluid zoning-criteria that effectively reflect a hybrid, dynamic reality where living, shopping, recreation, conservation and production processes are intertwined and mutually reinforcing.

Given that each municipality develops a Master Plan according to its own needs without following common intrinsic criteria , we are faced again with the fact that the proliferation of a diversity of small-scale place-making agendas is often counterproductive to truly integral national development strategies. This concern is well-founded since it speaks to reason to assume that notions of what is desirable (socially or ecologically) may be distinct when constructed at the local or national levels and are often resolved/inspired by social struggles for power.

However, it has been argued in this dissertation that this is only so when contested notions of the desirable are based mainly on instrumental judgments or dogmatic stands. In contrast when policies are based on intrinsic judgments and debates of what is desirable, common grounds would be easier to find among contesting notions of what's instrumentally needed to achieve those goals. This statement of course does not deny the obvious existence of differing notions of how reality ought to be, say between a small fisherman's community and the national government, however it forces actors to focus on intrinsic issues that lie at the core of controversies thus compelling them to orient political debates in this direction.

In the case of management of water resources, the country has seen a sprawl of community-based administration schemes, which increasingly control the provision of drinking water for their own communities (23.7 percent of users through a total of 1648 aqueducts by 2004). As a consequence, given the lack of an integral national

policy for water-resources management, one often finds controversies and conflicts between national, regional (watershed) and local-level priorities and interests.[101] As it is well known, water quantity and quality issues transcend political boundaries and follow the dynamics of the water-cycle, which often transcend the watershed level as well. Hence, rather than focusing on improving *post hoc* interscalar and interinstitutional coordination, policy makers should rather focus on establishing general intrinsic criteria to guide management schemes at all scales.

In fact, there exist important proposals as for what these guidelines ought to look like. An existing bill (No. 14.585), *Ley del Recurso Hídrico* (Hydrologic Resource Law) seeks to forward a national water-management legislation that regulates water-use and governance following criteria including:

- Acknowledgement of ecosystems as legitimate water users
- Designation of access to clean and sufficient water as a human right
- Designation of water-provision services as public and non-for-profit activities
- Designation of the water resource as a public resource,
- Advancement of public participation (of water-users) in the decision-making processes over management policies.

In addition, this proposal also places an emphasis on the instrumental goal of promoting decentralization in the governance of the resource, but puts it in check by

[101]This is the case of the aqueduct of the city of Orotina in the Alajuela Province, where neighbors oppose a decision to transfer its management away from the municipal government to the hands of the national water-works service (AyA) (La Nación Online, 8 February 2008).

demanding that decentralized management units be overseen by a coordinating body in charge of guaranteeing the fulfillment of intrinsic guidelines listed above. Lastly and most importantly, promoters of this law have pledged that they would support any adaptations to the policy mechanisms suggested in their proposal, as long as the spirit of the law – the intrinsic criteria described above – is conserved (Semanario Universidad, February 14 2008, p.6A).[102]

This important pledge reinforces the assertion that when intrinsic common grounds are sought, the often-publicized instrumental goals of good governance, efficiency and interscalar coordination between municipal, regional and national governments cease to be the focus of public debate. Instead, these instrumental goals are moved to the backstage. This is so because intrinsic debate and reflection on what should be the ideals guiding the nation-wide management of the water resource prevails and predates the existence of particular institutional plans. This process provides a direction and feedback cycle for the articulation of policies by decision-makers at all scales of action (local, regional, global), who are then free to choose the policy instruments that best fit to guide the management of particular resources (in this case water) towards open-ended intrinsic goals (ideals).

[102] The *Ley del Recurso Hídrico* is promoted by several environmentalist groups and NGO's and was already sanctioned by the Congressional Commission for the Environment in 2005. Even though the bill has been moved to a second stage by the discussion of the CAFTA implementation bills, civil society groups are putting pressure on representatives to pass the bill.

Having said that, we move on to elaborate potential place-making tools and agendas that can, (and are already), improve(ing) the intrinsic character of our productive efforts by raising our awareness and our capacity to shape and value an increasingly diverse and complex reality.

VIb. Productive Activities and their Role in Moving Towards Intrinsic Progress

The effort to transform the Costa Rican place in ways that foster an active critical understanding of an ever more diverse and complex reality faces many challenges, one of them, perhaps the greatest, is to be able to convince entrepreneurs and producers that economic growth cannot be the only value guiding their endeavors; that in fact guiding their businesses based on intrinsic criteria as the ones highlighted by geography actually works for their own benefit and that of society.

This task is particularly troublesome, given the simplistic idea that conceives businesses as simple money-making machines. But it need not be like that in the future and it has not always been like that in the past, nor is it like that everywhere. Article 50 of the Costa Rican Constitution is clear in marking the environmental limits to profit making activities, as they may not interfere with the right of every human being to enjoy the benefits of a clean natural environment. By the same token, articles 56 through 74 highlight the fact that every productive activity carries social responsibilities. These social duties include responsibility in providing the material means for sustaining a society, the payment of just salaries and the provision of

humane and nondiscriminatory working conditions. Likewise, the environmental sustainability milieu has brought to light that unrestrained economic growth cannot happen for an unlimited number of years if productive practices do not enhance the diversity of biophysical processes they and the rest of society depend on.

As explained in Chapters IV and V, the market-based response to this realization has provided useful tools to acknowledge the environmental costs of productive processes, economic growth and accumulation of capital. However, market-based mechanisms face three challenges in effectively fostering truly ecologically and socially sound modes of production:

1) Market-based mechanisms can only internalize those costs to which society has attached a monetary value.
2) The cost of conserving natural diversity will continue to climb as economic growth and population increases raise the demand for increasingly scarce raw materials and environmental amenities.
3) Market-based policies cannot account for a distribution of material and intellectual resources that effectively transcends the exclusionary character of market transactions.

Hence society cannot rely solely on money-mediated, market-based mechanisms if it wishes to guarantee a place-making agenda that truly moves us towards progress in improving our relationship with the natural realm and amongst ourselves. Such a daunting task requires that all actors in society, including those engaged in production

develop an intrinsic appreciation for our symbiotic relationship to the natural realm. This cultural change should be accompanied by place-making policies that integrate conservation of diversity and material development where the latter is to be limited by the former and not vice versa. In addition, market transactions need to be complemented by distributive social and economic policies that help the least 'competitive' – i.e., the materially poor, not-formally educated sectors of society – to overcome this otherwise insurmountable hurdle.

The following section takes these key observations into account to formulate alternatives for improving already existing self-declared sustainable development practices in the direction of intrinsic geographic progress. Finally, it will also suggest new or existing productive endeavors that would be instrumental in pursuing this same aim.

VIb.i. Payments for Environmental Services

The existing PES program, run by the National Fund for the Financing of Forestry (FONAFIFO), has been praised and criticized from different perspectives. Among the criticisms we find claims that it does not successfully establish a market for environmental services; others claim that it does, but it does so without successfully following ecosystemic priorities in choosing what forests to protect; while others have highlighted its inability to fully benefit lower-income farmers who in fact may be the one's in greatest need of such economic incentives. Whether we should

consider the PES program a system for paying, subsidizing or compensating farmers and their lands for their services to society are questions beyond the scope of this dissertation – they are basically instrumental questions. Nevertheless, when studied under the light of intrinsic geographic judgments, the PES program has value for it has opened the way to an immense number of initiatives that could effectively enhance both diversity of landscapes, species and conservation policies, while fostering ecological awareness amongst diverse sectors of society. In addition, if properly managed, payments for environmental services provide a mechanism to increase access to financial benefits amongst land owners of all sizes.

So instead of focusing on the particularities that would make the existing program more efficient in pursuing its self-declared goals, I hereby suggest changes in aims and scope that would further increase the capacity of PES programs to transform Costa Rica in directions suggested by intrinsic geographic judgments. First of all, the PES program needs to expand its definition of what constitutes a valuable environmental service. It is true that forests are perhaps the most valuable and largest providers of environmental services; however these ecosystems are neither the only ones relevant in enhancing the ecological processes in place, nor are they the only ones capable of increasing landscape diversity and complexity and our awareness of the intricacies implied by such processes.

As expressed in Chapter V, the PES program should also acknowledge the contributions of agroecological systems that make ecologically sound uses of resources like soils, water and nutrients. In fact, farmers implementing organic agriculture, rotational crops and other management-intensive agricultural practices such as agroforestry systems, rotational grazing and combined cash-crop/subsistence agriculture, provide immense ecological services that complement those provided by forests. These practices provide fertile grounds for soil regeneration, water recharge areas, nutrient cycling, and migration corridors, while also providing nourishment for human beings in ways that reduce transportation costs, pesticide and herbicide use, and fossil-fuel demands – in contrast to the requirements and environmental hazards associated with conventional agricultural practices and imported staples. By recognizing these services the PES program would effectively expand the range of beneficiaries to include also those who have less land and those that cannot set aside a portion of their property for forest regeneration. Thus, supporting and encouraging farming practices that move the country away from conventional industrialized agricultural production, which tends to be devoted to satisfy international markets – banana, pineapple, coffee, ornamentals, rather than local nutritional and cultural needs.

Therefore, we cannot but applaud the newly enacted Law for the Promotion, Advancement and Development of Organic Agriculture (Law 8591), which marks the way for establishing mechanisms to acknowledge “environmental agricultural

benefits" associated with small and mid-scale organic agricultural production (Arts. 23-30); yet this mechanism is largely under funded as it only allocates a 0.1 percent tax to fossil-fuel sales, compared to the 3.5 percent allocated to the forestry-oriented FONAFIFO PES program (Art. 38).

In addition, if properly articulated in the form of agroecological corridors, which can also become recreational and educational attractions, these farms hold huge potential in fostering our critical awareness of the ecological processes involved in the production of our foods. Implementing such a program would of course require differentiated recognition of farming practices according to their socioecological services. Whereas a farmer that simply substitutes traditional farming inputs with organic ones may be well compensated through the tax-cuts already offered by the Organic Agriculture Law, a farmer that successfully harvests peach-palms and ornamentals from a managed secondary forest may deserve a higher compensation. The existing PES program already provides a good starting point in moving in this direction as it compensates farmers that hold agroforestry systems that meet criteria such as a minimum and maximum number of planted tress per hectare and types of species planted – giving preference to native ones. However these compensations need to be further refined, for example by clarifying that agroforestry systems relying on native species should earn a higher compensation, as well as those farming-systems that are effectively articulated into agroecological corridors. In addition, special recognition ought to be given to those agroecological systems of a permanent

character in contrast to those that can only engage in short-term contracts. Moreover, special support should be given to those farmers making efforts to attract visitors, establish educational tours and even farm-intern programs that actively show that they are seeking to interact and share their knowledge with others.

Moreover, the legal and financial obstacles to enter the PES program need to be reduced so that a more diverse range of landholders may be eligible to enter it. Priority shall be given to land owners who cannot put their lands under production given land-use restrictions placed on them for their 'protected-area' status. This is important to take into consideration since there are several very successful tourist venues such as the Monteverde Cloud Forest Preserve, Tabacón Resort, La Selva Biological Station, Trogón Lodge and La Paz Waterfalls that enjoy the benefits associated with the PES program. Given that program funds are limited, it is counterproductive to support such venues that can very well sustain their businesses without these payments and in fact depend on forests and the resources they sustain to attract tourists.

In any case, it is important reiterate that selection guidelines used to define landowners (and lands) eligible to enter the program should balance both ecosystemic and socioeconomic criteria. Along these lines, commercial businesses engaged in conventional farming, forestry and tourism should be encouraged to engage in private PES contracts with other private enterprises seeking to offset carbon emissions,

reduce pollution loads to meet legal standards, for a sincere commitment with ecological sustainability, or for simple PR reasons. These contracts have proven to be successful in the past, as exemplified by the contract established between the privately held Children's Eternal Forest (CEF) and a hydroelectric plant, which to a large extent has guaranteed the financial sustainability of the CEF (Janzen 1999). Such a mechanism would also be effective in providing extra revenues to private protected areas as demonstrated by the contract between the Guanacaste Conservation Area and the Del Oro orange-export company. Although the Del Oro contract was canceled by a Constitutional Court ruling because of contractual restrictions inherent to the public character of the Guanacaste Conservation Area, it may be emulated without restrictions through voluntary contracts between private actors (Rojas and Aylward 2003, pp.17-9).

In sum, the publicly operated FONAFIFO PES program should also include amongst its goals fostering environmentally sound agroecological practices in order to truly reflect the socioecologic contributions associated with such farming practices.[103] Also, it should take a more active stand in reaching to landowners that are not successful business enterprises and that given their socioeconomic status have more difficulty in participating in the program. In contrast thriving private and public

[103] Currently the PES program makes special exceptions – number of hectares/trees planted, species authorized, monitoring mechanisms – to facilitate the establishment of contracts with indigenous communities. For a description of these (not many) exceptions see La Gaceta, March 13 2007, pp. 1-15. This built-in mechanism could serve as a basis to reach out to other underrepresented groups and practices, including organic agriculture, as stipulated by Law No. 8591, and other agroecological practices generating environmental and social benefits, not mentioned herein. For a description of these (not many) exceptions see La Gaceta, March 13 2007, pp. 1-15.

institutions already savvy in navigating the seas of market environmentalism should continue to profit from their competitive advantage in charging for environmental services they provide in a private (national and international) market of environmental services. Finally, the PES program should effectively foster and encourage farms to become places for education and outreach and universalize access to agroecological knowledge and awareness.

The existing PES program is funded both by funds collected from a fuel-tax and by donations coming from international institutions. However, the program is underfunded and typically fails to meet the existing demand for PES – Rojas and Aylward (2003, p.101) estimated that only 25 to 33 percent of demand for PES contracts is met. As described before, in a market that does not follow socioeconomic criteria to choose customers, benefits are controlled by the market-savvy and economically powerful. Thus, in addition to a diversification of criteria used to choose eligible landowners, the PES program needs to expand its financial base.

In this regard, expanding the program to include agroecological systems should help attract new public and private partners that may want to advance such practices through the FONAFIFO program. As will be discussed below, institutions like the Global Environmental Facility and the United Nations Development Program have already established programs that focus on similar small-scale development initiatives combining production and conservation and could very easily be interested in putting

together joint programs with FONAFIFO. By the same token international organizations like the Organic Farming League, Oxfam and international agritourism networks may find this initiative worth funding.

Yet, it is not sufficient to rely on international funding opportunities without first searching inwards. Hence, we are compelled to suggest that an equivalent to the fuel-tax charged to car owners should be charged to industrial customers. This duty would take the form of an energy-tax that truly reflects the cost of sustaining the biophysical processes needed to generate electricity in Costa Rica. Given the fact that electric power is mainly generated by hydroelectric generators, this tax would go directly to compensate public and private landowners whose forests provide the necessary services to keep the hydrologic cycle going, while also reducing sediment accumulation at dams. Fürst et al. (2005, p.31) estimated that, if fully acknowledged, these services would represent an estimated US$ 87 million (2002 dollars) per year – about 4 times the annual budget for the management of protected areas (MINAE-SINAC 2006, p.14). If industrial users paid their share of that bill, the funds generated could be used to directly compensate those private and public landowners providing the services – guaranteeing to a large extent the financial sustainability of the system of protected areas (Adamson 2006b, pp.69-70; Fürst et al. 2005, pp.146-7) In addition, this policy would release PES program funds currently used to pay owners providing those services, which could instead be used to support agroecological systems.

Along these same lines, public policy needs to make a distinction between environmentally enhancing and environmentally destructive production. Hence, the country needs to revise its trade policy so that it effectively reflects the country's desire to foster only those productive activities that effectively assume their role in accounting for the environmental implications of their actions. This determination would guarantee that economic ambitions are not fulfilled at the price of further environmental degradation and that they do not exacerbate undesirable trends such as spatial segregation, material inequalities and violence.

In tune with this stand, trade policy can no longer support the incredibly low prices charged to export-oriented manufacturers and producers who use vast amounts of water to fuel their processes – pineapple and sugar-cane agribusiness, food processing, high-tech manufacturers and aquaculture, among many others. These prices are set at rates that are far distant from reflecting the real environmental and social costs of providing the water they need to fuel their activities. Nevertheless, an executive decree issued in 2005 to update rates charged to water users – commercial, domestic, agricultural, industrial – assigns particularly low rates for precisely those productive users that consume the largest amounts of water. As a consequence activities like aquaculture, coffee, rice and sugar-cane cultivation, as well as industrial production that implements so-called 'good practices' only pay between $0.0003 and $0.0002 per cubic meter assigned to each water right (Executive Decree

#32868, Arts. 5-8). This is not to say that it is wrong to encourage practices that reduce water consumption in the industrial sector. Rather it highlights the need for fees to have a graduated structure where the largest consumers pay the highest rates for the water they use, so that users don't have any other option than reducing their water consumption patterns, while also being forced to internalize the cost of water in the prices of the products they sell.

Likewise the existing canons for charging industrial producers for the treatment of their waste need to be revised to truly reflect the environmental cost it represents. The recently enacted canon (2003) that charges $0.22 per kilogram of dissolved chemical oxygen demand (COD) and $0.19 per kilogram of total suspended solids dumped into rivers and water bodies by point-source polluters – industrial, commercial domestic, is a step forward in that direction (Executive Decree #31176 Arts. 8,9,23). However, there is a lack of legislation charging non-point-source polluters – mainly in the agricultural sector, and other activities like aquaculture, which are not currently included within this canon (Executive Decree 31858, Art. 3).

By the same token, drastic measures should also be implemented to oblige governmental institutions to pay the true costs of the environmental services they use, so that they can in turn become legitimate and active enforcers of the above-mentioned regulations. As it is right now, neither of the two norms is actively enforced by the respective government authorities, while the public Aqueducts and

Sewers agency (AyA) is probably the largest polluter in the country. As a result of this negligence, public institutions are depriving conservation efforts of important funds – up to 25 million dollars a year for the water-use canon alone – that would otherwise be used to support PES programs to protect water sources, to improve water and waste-water treatment and distribution facilities, and to promote conservation and educational campaigns (Zeledón 2006, p.5).

Echoing this concern, the government has already promoted a highly publicized policy called *Paz con la Naturaleza* (Peace with Nature) (Gobierno de Costa Rica, 2007), which seeks to legally bind public institutions to reduce waste and offset carbon emissions. Though a rather shy one, this is, at least on paper, a step in moving towards the desired goals outlined hereby.

Lastly, it is important to highlight that some of the suggestions outlined in this section are already echoed in recently enacted legislation that promotes alternative productive practices. In fact, we celebrate the decision to declare small and midsize organic farmers as eligible to subsidized loans, as stipulated in Articles 24, 25 and 34 of the 2007 Organic Agriculture Law. Moreover this law grants tax exemptions to mid and small-sized organic producers. These include a property-tax exemption for 10 years, a permanent sales-tax exemption for outputs and for some inputs, as well as future assistance in accessing foreign markets and navigating red tape (Arts. 24-8, 42).

The policy shifts either proposed or applauded above would further move the government's development agenda towards an integrated production and conservation policy that truly incorporates a respect for the natural realm as a moral virtue informing the transformation of the Costa Rican place. For this shift to be a meaningful one it would also have to include the tourism industry since this sector offers important obstacles and opportunities for moving towards intrinsic progress. Following we provide some suggestions as for how to emphasize the latter while minimizing the former.

VIb.ii. Tourism

It would be naïve to expect that tourist entrepreneurs would actually open the doors of their hotels and parks to all Costa Ricans. Nevertheless, such a move would not be absolutely necessary for guaranteeing universal access to ecological amenities in the country. Rather, as described in section VIa it is absolutely necessary for the government to take an active role in enforcing existing legislation granting access to all rivers and beaches as a public right. In order to do so accesses need to be clearly marked, constructions and fences removed from public zones, and basic services provided for the public to enjoy these areas. In addition the government should foster the proliferation of publicly managed recreational areas either as 'open or mixed-use protected areas' or as recreational parks, agroecological corridors and linear parks, which would be open to the public or charge minimum prices.

Costa Rican authorities should indeed foster access, maintenance and creation of a diversity of places devoted to the enjoyment and appreciation of nature. But parallel to these effort government policies should further advance responsible tourism practices mindful of their role in improving the Costa Rican place. As was mentioned in Chapter V such efforts would include the incipient Certificate for Sustainable Tourism, promoted by the current government, as well as the well-established Blue Flag program. In spite of their usefulness in rewarding important efforts towards sustainability – these certifications can do little to encourage social and ecological measures that would transcend its requirements, which for the most part are very basic.

Perhaps located a step beyond the CST, we find the Master Plan that regulates tourist-infrastructure growth within a 2000 hectares region in the gulf of Papagayo, Guanacaste. This tourist development project has been fully supported by several administrations as a project of public interest and is presented by its promoters as a prime example of sustainable development.[104] It was conceived with the help of architects, biologists, engineers and other professionals, seeking to provide an integral ecologically sound tourism cluster. Indeed, as an integrated development project 'Papagayo' can be thought of as a huge beach suburb comprised of hotels and other venues that follow strict architecture and environmental management guidelines.

[104] See for example the texts and justifications of the 1979 Law No. 6370, which declared the Tourist Pole of the Papagayo Gulf of public interest and utility; the 1982 Law No. 6758, which regulates the development of this pole; and the descriptions of the project offered in the web site of the Costa Rican Tourism Board (ICT 2008) or some of the real-state developers: Ecodesarrollo Papagayo (2008); El Morro (2008).

A sample of the criteria that developments located in the Papagayo tourist pole need to meet (PTGP 2008):

- Appropriate handling of existing vegetation coverage, including the protection of endangered species
- Reduction and control of pollution sources through mechanisms such as recycling of soapy waters, solid waste and provision of in-situ waste-water treatment plants, and recycling of treated sewage water in the irrigation of green areas
- Surface occupation restricted to 30 percent of developed property, maximum density of 20 rooms per hectare and maximum construction height of 14 meters or 3 levels

In addition, following article 23 of Law 6043, the Master Plan guarantees public accesses to beaches and panoramic views; while also requiring the construction of clearly marked parking lots for beach visitors that are not guests at the hotels, as well as two permanent camping sites with essential services – to relocate traditional make-shift camping cites used by Costa Ricans during the summer months (El Morro 2008a, p.10; Executive Decree No. 30175-MP-TUR, Arts.4, 9). Finally, the Master Plan requires that developers go through unprecedented efforts to preserve cultural-heritage sites (Herrera-Villalobos 2005, La Nación Online, February 20 2007; PTGP 2008).

Some developers exceed Master Plan requirements and go as far as to include 'ecological architecture' features such as (El Morro 2007, p.4):

- Use of renewable building materials (farmed wood)
- Conversion of roof surfaces into green areas in order to substitute the removed vegetation at ground level, strengthen acoustic and thermal isolation, filter dust and regulate humidity
- Collection, storage and usage of rain to meet hotel bathroom water demand, reducing potable water demand by as much as 70 percent per person.

In spite of these unquestionable signs of progress, the Papagayo tourist pole displays several characteristics that make one think twice before fully portraying it as an unambiguous step towards progress in geographic terms. First of all, this development makes little to no contributions towards providing both visitors and residents with a diverse social landscape. Hotels in the area serve affluent tourists, while the construction of expensive villas and golf courses does not meet the needs of mid- and low income Costa Ricans who are accustomed to camp or stay at affordable rented houses. This exclusionary place-transformation is euphemistically described by the leading real-estate developer in the area, Peninsula Papagayo S.A. (2008):

> "Part sophisticated resort, part primitive playground, Peninsula Papagayo fulfils a dream envisioned by the Costa Rican government more than 25 years ago to introduce the natural and cultural treasures of this rich land to an international audience. Those who embark on this remarkable journey will be among the first to explore the splendor of such a vast, unbridled wilderness.

> And uncover the wonders of a 2,300-acre paradise, known simply as Peninsula Papagayo, that has turned a former backpacker's haven into Costa Rica's premier five-star destination" (underline added).

With few exceptions these 'premier' tourists come and leave Costa Rica without seeing much else beyond a hotel's swimming pool and green areas, the beautiful ocean views and the beach. Such a homogeneous landscape, though probably relaxing, does little to increase the visitor's awareness of the processes needed to keep it in place – like the busing of hotel employees housed 15 miles away from the hotel, or the shipping of gourmet foods over great distances and the piping of water from distant springs. By the same token, this network of places does not help tourists become aware of the segregated Costa Rican landscapes necessary to sustain this overly distilled reality. Hence visual and environmental pollution and struggles for scarce water resources and humane living conditions are kept from the sight of tourists. The extent to which this development seeks to create such an idealized and alienating reality is nowhere better reflected as in the description of the area offered by the cited developer:

> "There are enchanted corners of the world where time stands still. Separate universes that are like living windows into the dawn of creation. Peninsula Papagayo, shining quietly on Costa Rica's north Pacific Coast, is one such place. Rare and wonderful. Pure and pristine. A virgin land immersed in an astonishing mosaic of beauty, it has stood sentinel against the ages. Images and imagination cannot capture the palpable spirit of this exotic haven. There are secrets only the land can share".

But marketing and alienation efforts aside, the Papagayo development, though mindful in its water utilization policies and environmental-impact mitigation measures, does not take enough measures to legitimate its existence in such an arid and already water-scarce region. This is important because the ecological adequacy of

a particular hotel needs to be assessed based on its geographical context and its implications need to be traced in space. Multimillion dollar developments located in the Papagayo Peninsula, clearly represent huge place transformations near and far, including the erosion of hills required to erect ocean-view rooms and construct top-of-the-line golf courses; the transformation of rivers to provide building materials; the supply of potable and non-potable water that affects groundwater availability elsewhere and the exclusion of huge expanses of lands (about 2,000 hectares) from the potential use of thousands of Costa Ricans that cannot afford the six star accommodations offered by the Four Seasons Hotel et al..

In sum, the viability of developments should not be assessed based on their capacity to host more and richer hosts, with less resources; but rather, based on their capacity to truly adapt their profit-making expectations, to social and ecological limits, and on their ability to enhance the diversity and complexity of the reality that allows them to take place. By the same token, this capacity needs to be put in check by the requirement that the construction of every extra room does not occur as a result of repressed ecological and social awareness both by developers and users.

As of April 2006, there were only 23 concessionaries in Papagayo, with one, Peninsula Papagayo S.A. controlling as much as 44 percent of the 2000 hectares in the project (ICT 2008). In fact, this corporation controls the whole of the Nacascolo

Peninsula described above and threatens to transform it into a private semi-island.[105] In fact, there have been legal claims against the Executive Decree #30175-MP-TUR mentioned above, which according to critics, grants exclusionary traffic and access rights to the Nacascolo Peninsula to Peninsula Papagayo S.A. and its customers. Among other claims, critics argue that these rights restrict access to beaches and make it obligatory for visitors to be bused by the concessionary from parking lots miles away from public beaches, thus restricting freedom of transit through what should otherwise be public streets and accesses to beaches (Constitutional Court file 02-001922-0007-CO). My visits to the area verify that the Nacascolo peninsula is currently under complete control of Peninsula Papagayo S.A., and that visitors only have restricted access to beaches in that area.

Outside of this peninsula though, the land is distributed amongst the remaining 22 concessionaries providing a larger variety of investors and land uses, even allowing room for a newly created wildlife refugee on Iguanita beach – a very popular destination amongst locals. Likewise, public accesses to beaches are well marked and respected, while parking lots are located within walking distance from beaches.

This trend reminds us that future tourist development plans need to guarantee that a variety of investors gets to participate in the making and envisioning of tourist attractions. Likewise, future tourist-development plans also need to guarantee the

[105] This narrow expanse of land encloses the project as its northern-most physical limit.

supply of a range of room and board services that cater not only to wealthy foreigners and Costa Ricans, but also to middle and low-income vacationers. This effort should clearly go beyond the simple allocation of camping sites, which obviously exclude all those families and individuals that do not own the necessary equipment or simply do not like to camp. In doing so, planners would allow foreigners and residents to share the great views, the clean beaches and scarce drinking water.

Otherwise, we stand at risk of reproducing a dull landscape where an average tourist staying at the world famous Four Seasons Hotel, is unlikely to have neither the chance to interact with a Costa Rican family nor to practice her Spanish skills. Thus, what could be an asset that ads value to the tourist experience, culture, is repressed through prohibitive housing and food services. Other high-end developments such as the Marriot Los Sueños in the Central Pacific, Nakuti and Costa Blanca in the Papagayo tourist cluster, isolate the visitor to such an extent that it makes exactly no difference whether the hotel is located in Cuba or in Costa Rica. In fact, the extent to which Costa Ricans are banned (by prohibitive prices) from the sight of tourist in this high-end resorts resembles very much the way Cubans are banned (by the government) from expensive resorts in Varadero. Thus we are reminded that places that blur our capacity to understand and share experiences and perceptions of reality are not desirable, regardless of the mechanisms by which such 'blurring' is achieved.

In addition future Master Plans should regulate water usage not by simply requiring the reutilization of gray waters, but rather through water rights that would effectively limit the total amount of groundwater available to hotels. Thus, owners, architects and engineers would have to limit the size of the hotel and adapt its design to truly conservation-minded water-management policies. This would guarantee that neighboring farmers, towns and hotels – even if small in size – would have enough water to continue their normal activities. Also, hotels that provide green areas, private nature reserves and other ecological attractions should facilitate regulated access to lay-persons as a means to acknowledge that many animal and plant species would not be able to subsist without the existing ecosystems located beyond hotel limits – walls in many cases. Likewise, hotel developers ought to be required to guarantee that building materials used to construct any infrastructure were not extracted from rivers, forests or quarries in illegal ways; similarly they should be required to use building materials and designs that reduce the amount of energy needed to generate comfortable indoor temperatures.

These suggestions remind us that the great majority of tourists visiting Costa Rica are attracted by its great diversity, be it in the form of landscapes, life forms and ecosystems as openly acknowledged by tourist entrepreneurs and marketing campaigns. Nevertheless, the tourist industry seldom recognizes its debt to these and other gifts provided by nature, which include also drinking water, clean air and

provision of food for their clients.[106] This is the case in spite of the fact that the biophysical processes that sustain the views, the beaches, the foods, the water, the flora and the fauna all transcend the limits of hotels and protected areas. Therefore, it makes sense to suggest that the income generated by the two existing tourist taxes – 3 percent of room charges and 5 percent of airline tickets, ought to be used in part to directly support these publicly held conservation areas and to enhance the PES program.

Funds collected through these taxes currently go directly to the Costa Rican Tourism Board (ICT) who uses them to sell the country as an international champion and pioneer of nature conservation. Hence, it would be intrinsically desirable and reasonable – according to the sector's own discourse – to ask the ICT to devote a portion of these taxes to precisely doing what advertising campaigns claim that Costa Rica does – conserve nature. This measure would not represent an extra cost to tourists and thus it would not hurt the business. In fact, it may even be welcomed by tourists, who would probably prefer to have their tax-money go directly to fund nature-conservation initiatives and the management of public protected areas, rather than to sponsoring marketing campaigns. Furthermore it could effectively be used to better reflect the spirit of advertising campaigns sponsored by the ICT and could be seen as a long-term investment by the tourist industry, which cannot artificially reproduce unrealistic representations of the country *ad infinitum*. In sum, if the tourist

[106]Efforts to acknowledge this interdependence include beach and road-side cleaning campaigns, and occasional donations to public protected areas or investments in private conservation campaigns.

industry wants to be sustainable, it has to contribute its share towards progress in making Costa Rica a better, more diverse and transparent place.[107]

Such guidelines would help democratize access to the enjoyment of high-quality ecological amenities, or better put, to a greater diversity of places where one can interact with nature through an always greater array of experiences. Nevertheless, these policies would fall short of effectively fostering a productive environment of accessibility and diversity if they are not accompanied by policies that effectively increase the diversity of ways in which individuals can participate of its material and intellectual gains. That means a desire to achieve intrinsic progress compels us to effectively assist as many sectors of society as possible in participating in the transformation of the country through their active engagement in productive (and intellectual) processes. The promotion and support of sound agroecological practices is one of these means, but there are also several initiatives that seek to engage the less privileged sectors of society in the tourist sector.

These initiatives can be mainly described as labor intensive, rather than capital intensive, tourist services. They include manufacturing of handcrafts, food vending and hosting. Handcrafting is generally a spontaneous activity that can however be

[107] Fürst et al. (2005, pp. 146-7) have analyzed the possibility of creating a 5 percent tax on the income obtained by providers of tourist services. Nevertheless, I foresee that such an extra tax on the tourist industry may not be welcomed by the sector. Nonetheless, I do not think that the compensation provided by entrepreneurs in the tourist sector shall be conceived on a voluntary base as some have suggested (ibid, p. 147). Rather, they need to assume their responsibility in sustaining the network of places that allows their existence by shifting their marketing strategy from an emphasis in reproducing a false green representation of the country, to an effort in creating an enhanced reality of diversity.

fostered by facilitating access to markets through specialized retail clusters, and through sponsored specialization courses/tutorials. In Costa Rica such venues already exist as in the case of *El Mercado de Artesanias* (The Handcrafters' Market) in San José and improvised street agglomerations to be found at beaches and other tourist destinations. Nevertheless, much of the market for handcrafts is dominated by a few dozen market-savvy artisans that have succeeded to become wholesale suppliers to vendors such as Café Britt, which owns retail stores at airports and hotels, and to other distributors that have access to mass markets through souvenir shops located in commercial centers, hotel lobbies and other tourist attractions like Volcan Poás, Tabacón Lodge, Monteverde Cloud Forest Preserve, La Paz Waterfalls, Doka Coffee Tour, etc. Clearly then, there needs to be even more participation from public institutions to increase the number of producers who can access these markets and simultaneously diversify the handcraft portfolio offered in the country.

Food vending and housing for tourists are other very important options opened to capital-deprived Costa Ricans. Still, as reported by Fürst et al. (2005, p.27) in 2002, only 1.3 percent of total income generated by tourism was estimated to go to *cabinas* and other small hosting facilities. Yet when explicitly focused on tourism to protected areas and their immediate surroundings, we find that for a remote area like Cahuita National Park, where tourists generally stay more than one night, income captured by local hosts and food suppliers amounts for up to 58 percent of total tourist expenditures; in areas located closer to the cities, where tourists generally spend only

a night, like Chirripó National Park , local hosts and food providers capture as much as 40 percent of total expenditures; and around protected areas within a day trip from San José locals capture as much as 6 percent of expenditures, mainly through food vending and sale of local produce (Fürst et al. 2005, pp.71, 104,133). Hence, the potential to tap on the resources carried by tourists generally interested in visiting places of 'natural' attraction is fairly decent if you get tourists to stay at least a night in your area.

Aware of these trends, several institutions have articulated programs to foster a market-niche that further strengthens the reliability of such an industry. Thus, educational institutions such as the National Learning Institute (INA) and nongovernmental organizations like the United Nations Development Program (UNDP), Fundecooperación and the Rainforest Alliance actively seek to provide technical training and support to families that seek to enter this market – mainly in food preparation, environmental management, international hosting etiquette, etc. (PEN 2007, p.208).

There are many different cooperatives and community organizations and even individual families that have joined efforts to provide attractive tourist services that go beyond room and board. Among these we find Coope-Silencio in Quepos, Puntarenas, APROSAMA in Cutris Alajuela, AZAGROTUR in Miramar, Puntarenas, Las Bromelias in Buenos Aires de Upala, and women associations in Isla de Chira,

Puntarenas and El Zota, in Cariari, Province of Limón. These organizations in turn count with the support of several NGO's that serve as tourist agencies or also middlemen between wholesale agencies and the community organizations; this is the case of JAZON, ACEPESA, ACTUAR and COOPRENA R.L.[108]

The packages offered by these organizations tend to include daily family and community chores offering tourists the possibility to actively learn about the local culture, while also being able to interact with the surrounding natural environment. Typical activities include farming practices, fishing, bird watching, composting, traditional foods preparation and hiking tours among many others.[109] In the case of APROSAMA, a farmer association located in San Marcos de Cutris, Alajuela, a group of women in the community has organized their households to receive tourists with the support of JAZON. They generally offer a clean room in their house, a family dinner and breakfast and then short tours to show milk-processing chores – milking, churning, and the making and conservation of cheese; the use of biodigestors to generate cooking fuel from animal waste; composting and their use in farming; and traditional cooking techniques like handmade tortillas, coffee and corn grinding. Generally they charge $15 for a night stay that includes dinner and breakfast, and an extra dollar for each of the tours.

[108] See list of acronyms for the complete names of these organizations.
[109] For a case study of a rural Costa Rican community working under this framework, see Jackiewicz (2006).

During a two-day stay with one of these families, and through several visits before and after my stay, I was able to witness how dignifying such a practice was. Family members were extremely proud to share their daily, traditional lives with visitors and in turn being able to generate important supplementary income, which in the case of the women involved in this project, is particularly important since women generally suffer from underemployment in the rural areas. All my business and logistic transactions – as I also brought a group of students with me – were conducted with women, and I can assert that men seemed to be pleased with the state of things. They were in charge of the agriculture-related tours and seemed content to participate; daughters also participated in the cooking tours, one of them for example, studied computer science at a technical university during weekdays and on the weekend she joined the family, and collaborated –seemingly pleased – with the tourist-reception shores.

Perhaps the main sources of social tension aroused by the influx or tourism to these communities may be attributed to both social and economic changes. Families have had to get used to prepare vegetarian or even vegan meals for their guests – something very unusual in the Costa Rican *campo* (rural areas). In addition they have had to adapt to more liberal social norms brought by European and North American tourists, but apparently, with few exceptions, families have gotten accustomed to have single men and women sleep in the same room or even the same bed. Economic pressures though do not seem to be as easy to navigate as social and cultural ones.

Given the increased demand for agritourism venues, tourist agencies and even the Costa Rican Tourism Board are increasing their pressures for families and cooperatives to standardize services and make home-improvements that often go beyond the capacities of households (PEN 2007, p.208). Often families cannot afford buying an extra room or even an extra toilet as desired by tourist agencies or do not wish to participate in training courses and seminars given the time-commitments implied. Ironically though, in the case of families that wish to build an extra room to house a tourist, student or researcher they are often deterred to do so by stringent municipal regulations that require expensive permits and blueprints for house expansions that they cannot afford.

In spite of these drawbacks, agritourism practices are perceived by participants and observers as beneficial for their capacity to extend economic (and social) benefits to communities otherwise distant from the beaten tourist path – and are being replicated elsewhere in Central America (PEN 2007, p.208). In turn agritourism has been able to foster renewed appreciation for Costa Rican rural life and their particular interactions with nature, both among tourists and increasingly among nationals as well. Efforts should be made by the institutions engaged in advancing these practices to keep in mind each organization's and even each family's desired level of engagement. By the same token, these institutions should be attentive to participants' real needs and should carefully assess whether it is feasible for them to acquire further time commitments and financial responsibilities.

Moreover, initiatives need to be coordinated with municipal governments to facilitate desired infrastructure expansions and to aid with marketing efforts. Also, access to PES contracts and to the newly established fund to acknowledge the environmental benefits generated by organic farming should be facilitated when applicable. Lastly, authorities and institutions responsible for the promotion of ecological awareness in the country should participate in the promotion of agritourism among Costa Rican citizens to encourage experiential knowledge of their own rural communities and the socioecological processes involved in maintaining both rural and urban livelihoods.

Given the remoteness of most of the locations where agritourism takes place, communities often lack teachers, health-care professionals and other types of technical assistance including lawyers, psychologists, biologists and veterinarians. Urbanites in turn lack awareness of the socioecological processes that render their lives inseparable of the agroecological processes taking place in the *campo*. Clearly then, there is plenty of room for mutual collaboration between urban and rural citizens. This reality should encourage collaborative programs where communities can become ecological alphabetizers and urbanites could provide specialized assistance on demand. These 'exchange' programs could be articulated by active agritourism brokers like JAZON and ACTUAR with the support from government authorities and/or international development organizations.

By moving in this direction, rural communities could continue redefining their role within Costa Rican society to transcend prejudices that represent them as simple producers and sellers of agricultural goods and agritourism services. Rather, Costa Rican society needs to value its rural communities as morally responsible actors in the transformation of their own realities and that of their fellow citizens. Similarly, urban participants in the program would see the value of their specialized knowledge expanded beyond the price of their labor as dictated by market transactions, to include also gift-value and self-fulfillment through mutual collaboration with fellow human beings. Last but not least, they would see their lives enriched by increased awareness of their own country, their fellow citizens and their living conditions and traditions, as well as by increased acknowledgement of the labor and biophysical processes needed to produce food, ornamentals and other essential goods necessary to sustain healthy human life in the cities.

Alongside agritourism networks, rural and peri-urban communities are increasingly engaged in the commercialization of previously untapped biological resources that include butterfly cocoons, iguanas, decorative fish, newly domesticated ornamental and medicinal plants and their derivatives including teas, candy and cosmetics. Next section assesses the potential intrinsic contributions towards progress associated with this trend.

VIb.iii. Biotrade and the New Generation of Nurseries and Gardens

As emphasized above, intrinsic geographic judgment invites us to see bioprospecting and other biotechnological practices, either performed by individuals, companies, INBio, a national or a foreign university, as shaped by symbiotic relationships that render human and nonhuman life mutually dependent. In doing so we are compelled to use biotechnology to increase our awareness of those relationships and to diversify the number and types of actors engaged in shaping them.

In fact, INBio and other institutions like the Global Environmental Facility (GEF), the United Nations Commission on Technology and Development (UNCTAD) and the United Nations Development Program (UNDP) have already articulated common projects that seek to capitalize on the advances of bioprospecting and traditional understandings of Costa Rican biodiversity to render them potentially useful in forwarding goals akin to intrinsic geographic progress.

This is the case of the pilot participatory project coordinated by INBio in collaboration with UNCTAD's Biotrade Initiative, Ministry of the Environment and the Costa Rican Ministry of Trade (COMEX) to explore the potential legal and commercial viability to tap on incipient markets for innovative biological products and services that are unique (or almost so) to Costa Rica. After intensive discussions with NGO's, farmers and trade experts, this study concluded that the country should articulate a national biotrade strategy to advance commodity chains for three different

kinds of goods and services: ornamental plants, agritourism and the commercialization of butterfly pupae (Guevara and Huertas 2006).

It turns out that none of these products and services are new to the country. However, it is true that, with the exception of plant nurseries, they fill relatively new market niches. These niches possess great potential in positively incorporating new, previously marginal, sectors of society to enjoy the benefits associated with the country's positive image abroad and the potential sustainable uses of its very reach biodiversity. Indeed, the GEF and the UNDP have already funded several projects that seek to support butterfly farms, as well the installation of biodigestors for energy generation and animal-waste reduction, which have been used by rural families as tourist attractions – as is the case of APROSAMA discussed above.

These projects have been funded by the Global Environmental Facility as part of its Small Grants Program (SGP). The SGP seeks to foster sustainable development by funding community-based projects with grants no larger than US$ 20,000. Given its environmental-sustainability requirements, eligible projects must fall within one of several categories: biodiversity conservation, climate change, governance of international waters, land degradation, ozone-layer depletion, and persistent organic pollutants.[110] Projects funded to install biodigestors fall within the 'climate change'

[110]The GEF, which was constituted as a multinational initiative intended to put in practice the Convention on Biological Diversity among its signers, more than 40 SGP-projects per year in Costa Rica through the UNDP, its local implementing agency. Overall, the SGP has funded more than 1800

category, while butterfly farms fall within the 'biodiversity conservation' category, since they generally include a reforestation/habitat regeneration component.

As director of a student research project I conducted while affiliated with the School for Field Studies, I had the opportunity to personally experience the socioecological impacts of a SGP-funded butterfly farming project in a small community in the town of Santa Teresa de Cutris, on the northern plains of the Alajuela Province – about 45 minutes away from the community that runs the APROSAMA agritourism project. Project funds were managed by APRODUMA a local coop which originally included 13 families but has now seen its numbers reduced to three. Through this project APRODUMA was able to build three greenhouses for reproductive purposes, a lab and a nursery for host plants. These facilities are located in a property ran as an integral farm and belongs to one association member. Given the great diversity of plants it sustains, the property provides most of the 'fresh seed' needed to maintain the genetic health of the butterfly project. In return the project facilitated the cash to purchase trees for reforestation in the area surrounding the butterfly farm.

According to project leaders, a process of trial and error followed the construction of the greenhouses, thanks to which they developed the expertise to understand the different species' reproductive cycles, relationship to host-plants, and food-demand fluctuations during the year. As a consequence they learned to keep a reservoir of

---

projects in more than 178 countries worldwide for a total of $7.4 billion in grants and a total of $28 billion in cofinancing with individual countries (Pequeñas Donaciones 2008).

host-plants for feeding purposes during seasons of high butterfly reproduction, while also learning to balance butterfly populations to reduce labor demand during low seasons. Market fluctuations however have not been as easy to navigate as the natural reproductive cycle of butterflies. As a consequence the farm often over-produces pupae during periods of low demand and falls short during periods of high demand. This situation is aggravated given the fact that there is basically only one reliable middleman able to process live pupae for export. Thusly, the middleman maintains an ever larger number of suppliers that in turn need to sell their highly-perishable produce at any price. To make things more difficult to growers, the middleman does not carry the risks involved in the transportation of pupae, both within the country or abroad and only pays for pupae once they have been safely delivered to clients (mainly European or North American).

Even if the project is selling less pupae than the 700 a week originally expected – production tops 400 a week during high season, it is sustainable in financial terms. Given the above-mentioned technical and financial difficulties, one year after exhaustion of GEF funds, the project can be described as a solid step towards intrinsic progress. Indeed it has had positive socioeconomic impacts beyond those associated with the APROSAMA agritourism project, including: generation of supplementary income; female and male empowerment by facilitating self-employment and community recognition; raised ecological awareness; critical understanding of ecological complexities supporting the butterflies' life-cycle; and increased

interaction with community organizations around the country. In addition, this project provides a good example of how knowledge developed by researchers and farmers themselves, regarding the reproduction of butterflies in captivity, can be used to directly extend the benefits associated with the commercialization of nature to reach families that would otherwise never have a chance to do so.

Nevertheless, the future for small-scale projects is not at all bright. In fact, in spite of its positive outcomes, the families involved in the APRODUMA butterfly farm are living a reality shaped by community disintegration, lack of access to land, and water- soil- and air-borne pollution associated with the expansion of pineapple monocropping in the region (see Table 9 below). Hence the APRODUMA greenhouses, its plant nursery and host-plant gardens, and the agroforestry farm where they are placed, stand as lonely survivors of diversity amidst a landscape of monotony (dominated by somber pineapple plantations). This dullness of course transcends the landscape, to include also a monotony of employment sources, recreational spaces – dominated by bars and billiard rooms, decreasing varieties of plants and animals, as well as sharpened ethnic segregation – since the population is increasingly comprised by underpaid, mostly illegal Nicaraguans.[111]

[111] Rather than fostering a landscape where Nicaraguans and Costa Ricans coexist through the year, the plantation economy fostered by pineapple plantations and processing plants has driven away Costa Ricans who can afford to relocate to healthier environments. To substitute for fleeing Costa Ricans, plantation managers rely on groups of illegal Nicaraguans who come to the area when labor demand is high and move away when it is low. This pattern carries with it several problems, like the proliferation of slums and temporary housing without minimum health requirements, violence between permanent inhabitants and incoming ones, discrimination against newcomers and their children at school,

Table 9. Main agricultural products, extension and pesticide use

Product	Extension 2000 (has.)	Extension 2006 (has.)	Pesticide Use (Kgs./ha./yr)
Coffee	106,000	99,000	6,46
Sugar Cane	47,200	48,360	10.11
Bananas	47,982	42,700	49.29
Pineapple	12,500	38,500	24.55
Oranges	25,300	23,000	1.56
Oil Palm	39,790	52,625	n/a
Beans	30,827	14,035	n/a

Source: PEN 2007 (p.261).

But the problems associated with monotonous landscapes are not restricted to the Cutris area. Indeed, as shown in Table 9 above, lands farmed by pineapple and other monocrops like African oil palm, sugarcane and bananas, continues to expand, affecting not only their immediate surroundings, but even also important protected ecosystems – mainly through pesticide dispersion (PEN 2007, pp.262-3). This increasing lack of diversity poses an important challenge to the mid- and long-term efficacy of the Small Grants Program initiative and to its efforts to guarantee access to the benefits associated with the sustainability milieu.

In the specific case of families affiliated with APRODUMA, pineapple expansion reduces the number opportunities available to diversify their sources of income. This is the case since an agritourism project is not likely to be profitable in a sea of pesticides, nor are they likely to continue to find butterfly breeding grounds within

---

alcoholism and rapes since many men come without their families and live in a homosocial world for most of the time.

the increasingly dominant pineapple plantations. In addition community disintegration caused by outwards migration – by families seeking to avoid the health threats associated with heavy pesticide use – makes it increasingly hard for APRODUMA to find extra hands when demand for their pupae increases or even finding educational opportunities for their children – the local school is a single-teacher institution who instructs 13 children, down from 17 last year.

In spite of this dull scenario, the model set by the Small Grants Program in funding initiatives along the lines of those pursued by APRODUMA and APROSAMA is by all means conductive towards geographic progress. Greater efforts should be made by public institutions like national banks and the Ministry of Agriculture to develop similar programs in collaboration with other governmental instances, the UNDP, GEF and research institutions like INBio, UCR, UNA and even foreign educational institutions. According to the study performed by Murillo and Arias (2005) there continues to be demand for a greater diversity of butterfly species, ornamental and medicinal plants. (My own observations during a visit to another co-op in the Province of Limón revealed that adding value to medicinal plants and spices by means of low-tech processes like sun-drying or boiling is fairly profitable and requires little capital inputs).

Thus, research efforts should be oriented towards 'discovering' new species suitable for controlled reproduction and/or commercialization and continued technical support

should be given to breeders – a flaw of the SDP identified by several butterfly growers. Moreover research efforts could help in the further identification of plants, and their derivatives, that can be easily grown for sustenance and marketed for supplementary income generation. However, parallel to these efforts, there needs to be earnest studies that assess the ecological impacts associated with the reproduction of wild animals in captivity and the potential consequences of domesticating and reproducing butterfly-host-plants. By the same token, there needs to be better monitoring programs for butterfly capturing and releasing practices by farmers and their potential effects on the genetic health of butterfly populations in the wild.

In addition greater support needs to be given to initiatives that effectively diversify productive activities combining practices such as agritourism, organic farming, and plant nurseries – to mention one possible combination. Herein lies another space for establishing a pluralistic fund to compensate (and promote) the social and biophysical benefits associated with ecologically sound productive practices along the lines of the ones established by Organic Agriculture Law and the PES program. These initiative should be accompanied by educational programs to advance the installation of biodigestors to produce methane gas for cooking from pig and cattle manure, and the adoption of composting and *bokashi* techniques, given the direct savings in synthetic agricultural inputs they provide to farmers and the environment. Although the GEF's Small Grants Program already funds projects that meet some of the goals outlined herein, this program ought not to be taken as a substitute for government policies, but rather, as a complement.

Lastly, greater support should be given by funding institutions and public bodies to envision mechanisms to reduce the high degree of uncertainty associated with market-demand fluctuations on products like butterfly pupae and ornamentals. Along the same lines, there needs to be an up-to-date informational database that provides farmers with the necessary information to make informed decisions about whether to enter the market of butterflies or a particular ornamental in order to avoid market saturation and an eventual collapse in prices. If Costa Rica is to promote these activities as truly alternative tools for increasing quality of life and enhancing diversity, as suggested by biotrade initiative coordinated by INBio, it needs to support these productive processes just as it provides incentives and financial protections to coffee growers and tourism entrepreneurs.

Likewise it is important to reiterate that butterfly farmers, ornamental and medicinal plant growers are to be seen as important agents of change given their experiences in navigating the ecological dynamics involved in making a living out of nature. Acknowledging this fact constitutes an imperative to include farmers and growers as key actors in helping society advance ecological awareness through sound educational campaigns and exchange programs that truly expand socioecological awareness everywhere in the country.

On a different note, the case of APRODUMA illustrates the extent to which undesirable practices such as the uncontrolled expansion of pineapple plantations can put at risk place-making efforts conceived to increase the diversity of actors involved in making places where income generation, community participation, gender equity and (apparently) sustainable uses of nature are woven together. Together with criticisms devoted to big-scale tourism activities, any constructive critique of the moral geographic implications associated with the industrial transformation of nature by agribusinesses will demand strict regulation on the hands of the government. This in order to guarantee that economic ambitions are not fulfilled at the price of further destruction of diversity in life-forms, landscapes, livelihoods and cultural manifestations, and that they do not increase social degradation manifested in the form of spatial segregation, extreme material inequalities and violence. In contrast to such a trend, Costa Rican society should strive to create a brighter, more diverse Costa Rican place, where increasingly more people and groups actively and critically participate in its transformation.

In order to move in this direction it is imperative for the Costa Rican society as a whole to more intensively engage in discussions that truly reflect upon the moral (and empirical) implications associated with the models of society that are inspiring our current place-making projects. However, as emphasized in Chapter III, places can become effective instruments for progress only through human agency. Indeed, social- and individual change are mutually constitutive processes that shape and are

shaped by the places we construct. Hence, if we are to move in directions that point towards intrinsic progress, there needs to be a drastic cultural movement that effectively raises critical awareness of our agency and role as individuals in shaping the Costa Rica place. Following I lay out some potential paths for triggering such an emancipatory process.

VIc. Place Transformation and Critical Awareness

This chapter has offered several proposals for improving existing policies and places or for envisioning new ones that would more effectively move us towards intrinsic progress in transforming Costa Rica. The objective of those proposals is to encourage a debate that questions the intrinsic character of the existing Costa Rican place and that of the one we as a society want to have. But more importantly it has been emphasized that any place-transformation needs to have as its ultimate goal the advancement of a cultural change in a direction that legitimizes and propels further desired transformations based on nonreductive, nonabsolutist moral frameworks. As shown above, intrinsic geographic judgments can be very useful in providing criteria to develop such a framework and more importantly in generating concrete alternatives that would significantly improve existing places and policies.

However, Sack's moral theory reminds us that nonrelativistic but open-ended moral virtues and their one-to-many associated transformations – like the ones presented herein – constitute an ever receding horizon, and thus we need to incessantly

problematize existing places for progress to take place. In order to do so, we need to encourage places that become mediums for public discussion, while envisioning new strategies to compel a larger number of individual and groups to reflect upon what are the desired moral virtues that should guide our place-making processes. This means, we need to provide spaces for private and public reflection and discussion focused on the extent to which our place-making projects are shaping reality in ways that reflect our common, yet contested, ideas of what is good and desirable. More importantly, rather than conducted in an abstract vacuum, these exercises in truly democratic place-making, need to explicitly suggest the ways in which we ought to socialize elements of the natural realm, and how in doing so we transform their meanings, the way they shape the landscape and our possibilities for living

Nevertheless, as explained in Chapter V, free-market-hegemony has permeated all sectors of society, transcending politics and ideology to include also the great majority of cultural manifestations and policy-making. Thus, threatening to shut-down attempts to activate healthy reflection upon the moral consequences of our ongoing place-making agendas, the tools we use to put them in place, and the instruments we use to measure progress.

In spite of the lack of interest on the hands of the media to further public debate on key issues such as the extent to which we ought to facilitate and allow the commodification and privatization of nature, and more explicitly, debates about what

we consider conservable nature, pristine nature, and tradable nature, there are a few instances that mark the way for progress in advancing this much-needed practice. This is the case of the public higher-education institutions which have traditionally played an important role in fulfilling their conceived role as the critical consciousness of society. Rather than playing the role of passive actors, these universities were actively engaged in fostering discussion forums regarding the Central American Free Trade Agreement (CAFTA) and its implications for Costa Rica. In addition the University of Costa Rica (UCR) was actively engaged in reaching-out to communities away from its main campus in San José, by means of itinerant information-booths that visited parks, schools and other public spaces to inform the public about CAFTA. But the contributions of the UCR, the National University (UNA) and the Costa Rican Institute of Technology (ITCR), in regards to CAFTA but also in regards to many other topics of public interest, ranging from gender issues to adult education, also include their extension programs, satellite campuses and public media, which are actively used to generate and disseminate information on a nonprofit basis. Hence their weekly newspapers, and daily television and radio programs are a constant source of diversity in agendas, topics of discussion and formats, which greatly enrich the informational landscape of the country.

Herein it is also important to mention other private or semiprivate educational institutions like the School of Agriculture for the Humid Tropics (EARTH), the Center for Tropical Agriculture and Economics Research (CATIE), INBio and others

for the role they have played in reaching out to mainly agrarian businesses and communities to help them catch up with technological advances and research. These institutions however have been more important for the agendas they have furthered – many of them international in essence - rather than for their active participation in a public debate about the desired directions in conservation, food-production, and natural-resource management. Indeed, they have been very silent in informing the current debate about the patenting of life, the commercialization of genetically modified organisms and more explicitly, the extent to which human beings should continue to experiment with nature in order to develop new products and services. The case of butterfly farming promoted by INBio, the Global Environmental Facility and the United Nations Commission on Trade and Development brings to light a lack of public engagement with a moral debate regarding the ethical handling of butterflies and whether or not we ought to be treating them as products, the same as potatoes or chewing gum. The Ministry of Environment for example, is very clear about not allowing the breeding of frogs for trade, yet it authorizes their display in frog-gardens and other sorts of live-museums. This seemingly arbitrary discrimination begs the questions: why is it that frogs are more valuable than butterflies or ornamental fish, and even iguanas – all of them objects of trade and breeding programs? And if butterfly farming is ok, shall the commercialization of butterflies be restricted to some species? Shall it be restricted to pupae, or shall it allow also for the commercialization of live larvae and adults? Shall it be restricted to breeding for the manufacturing of handcrafts, or should it rather exclude them as raw materials?

But these rhetorical questions should neither imply that I am necessarily against the trade of butterfly pupae, nor that I am in favor of establishing an international trade of frogs. Rather it does suggest that we have not created proper spaces for discussion of important values implied in the ways we socialize nature, which are being reproduced and transformed without proper thought.

Along these lines, it is important to highlight that we continue to avoid a public debate that truly legitimizes political measures to define priorities regarding water-rights and their uses. Such a debate is imperative since as the country increases its population and industrial activities sprawl everywhere, we continue to put increasing pressure on water resources. The current state of affairs reveals that drinking water sources continue to be polluted and privatized, to the extent that selling bottled water is now a common practice, whereas it was absent from supermarkets as recently as 15 years ago. Concerns with the threats to the country's capacity to fulfill the right to access drinking water of quality and in good quantities are clearly on the agenda of a great number of communities and nongovernmental organizations. As reported by PEN (2007, pp.252-3), more than 47 percent of aqueducts provide nonpotable water to approximately a fifth of the population. To make things worse, these aqueducts tend to be concentrated in marginal counties where people have less disposable income to spare for purchasing bottled water.

Nonetheless, these concerns have not been articulated as part of a national debate. This debate has been avoided so far, as evidenced by the fact that the *Ley del Recurso Hídrico* discussed above was submitted to congress but neglected by the government in favor of a fast-track discussion of CAFTA and its sister-laws. Indeed, a national debate on the desired intrinsic guidelines to orient a national water policy is still absent from the political agenda or institutional plans. This debate would be essential to effectively gather the needed political support to articulate a national water policy that sets proper intrinsic guidelines that guarantee water provision for human and ecosystemic consumption everywhere.

As highlighted by biologist Freddy Pacheco (2007c), in light of CAFTA, which will allow for the commercialization of Costa Rican bottled water in the huge U.S. market, securing universal access to potable water is increasingly dependent on the establishment of intrinsic criteria, such as the declaration of access to drinking water as a human right. In the absence of such norms, water provision would be highly susceptible to exclusionary, and thus undesirable, market-based management mechanisms.

Needless to say higher-education and research institutions like the UCR, INBio and EARTH ought to take a much more active role in fostering a national debate on this key issue. The National University already has a research institute devoted to the study of water policy and management (PRIGA) that includes among its key priorities

the provision of educational materials for supporting teachers and professors. Such programs need to be further supported, improved and emulated in collaboration with communities, public and private research institutions.

A good illustration of what such a national campaign for the responsible use of water resources could look like is offered by the Nectandra Institue. This NGO has implemented an educational campaign in the San Carlos River watershed in collaboration with public schools, community-based water-management boards and religious institutions in the region. The objective of this campaign is to foster a 'water culture' amongst the inhabitants of the watershed through educational seminars, participatory learning communities, soccer championships, community-driven conservation of water springs and field-trips. Needless to say, such an important place-making effort could (and should) be articulated nationwide if supported by public educational institutions at all levels

Likewise, private higher-education institutions like the EARTH and CATIE have been important in experimenting and furthering organic agriculture and other ecologically mindful practices like agroforestry and crop-rotation. However, to my knowledge, they have been mainly concerned with the introduction of organic agriculture into industrial farming, rather than also promoting alternative farming-styles focused more on local food-chains, combined subsistence and cash-crop agriculture, and food-security.

Public universities do undertake outreach projects to, for example, rescue traditional forms of agriculture, and products, among indigenous communities, but what about the rest of the country? As shown previously on Table 9 above, traditional crops like beans, which are eaten by a majority of Costa Ricans, have seen their extensions reduced by half in the last 6 years, in favor of export-oriented crops like sugar-cane, African oil-palm and pineapple (PEN 2007, p.261). I sincerely doubt that there is enough awareness and debate about the risks of further promoting export-oriented agriculture in a small country like Costa Rica, which among many other problems, reduces the diversity of food sources available (affordable) to the majority of the population. Public and semi-private higher education institutions need to join efforts to both revise their training and research priorities and reflect on the consequences of the technology-intensive, export-oriented agricultural practices that have so much dominated the Costa Rican landscape in the past.

Moreover organizations like INBio and the Organization for Tropical Studies have a large responsibility in leading a nationwide reflection process on the intrinsic directions we ought to follow. These institutions host a high-number of ecotourists every month; they enjoy national and international credibility; possess important lobbying power amongst the political class; and most importantly, they depend directly on the health of the natural patrimony of the country to conduct their activities. Therefore, they have a responsibility in sharing this patrimony and their

knowledge of it to an increasingly diverse number of foreign and national citizens. They ought to do so in ways that increase people's awareness of their role in preserving and enhancing the diversity of landscapes, life-forms and livelihoods that can take place in the country and elsewhere.

By the same token, these institutions should become leaders in fostering place-making activities that facilitate such endeavors. It is not sufficient for them to provide yearly reports of marginal increases in visitors, papers published, and grants secured. Rather than goals on their own, they should be means to achieve intrinsic progress. Hence, these means need to be diversified and strengthen through collaboration with an increased diversity of actors.

In fact, it is important to mention here that INBio should seriously consider depositing its collections under control (or comanagement) of Costa Rica's National Museum or one of the public universities. Given the fact that these collections have been gathered to a large extent from public protected areas, they should by all means be returned to public tutelage. The excuse of a lack of public funding to properly maintain these collections is not valid, and should instead encourage INBio and its partners to raise funds to complete these processes that would, by all means, increase public accessibility to INBio's findings. Indeed, it is hard to imagine what prevents INBio from becoming part of any of the public universities. This shift would

guarantee true public accountability of its practices, together with further integration as a key element of a truly national project for cultural change.

The development of a critical ecological awareness is a long-term emancipatory process that needs to be reinforced through the Costa Rican place to be effective. In doing so this process needs to take the formal (public and private) educational system as a central component. In fact, this process needs to integrate and enrich the educational system with all the opportunities offered by places and place-making initiatives that seek to increase awareness and enhance diversity, like urban farming plots, volunteer programs, hiking and camping trips to protected areas. However, these experiences need to be complemented by a critical pedagogy that highlights the individual's role as an important actor in shaping a better Costa Rican place. Thus, educational programs need to be more explicit about contextualizing individuals' lifestyles and needs within their social and ecological context. They should raise students' awareness of the potential positive effects associated with adopting less energy-intensive lifestyles, waste-reduction practices, responsible water-use and disposal of solid wastes, to mention just a few important topics.

In addition curriculums should be developed to raise students awareness of nutritional and agroecological facts behind their eating habits like potential health issues associated with sedentary lifestyles and socioecological impacts associated with an over reliance on conventional, chemical intensive food production and consumption.

Although academic subjects such as English, Computer Science, and Math, would continue to be important, these subjects should be means rather than goals on their own. Rather than training grounds for getting a job, basic educational institutions need to become schools for life, where citizens learn, live and share the processes trough which human beings support their own lives, the consequences carried by these processes, and more importantly, the opportunities to improve living conditions near and far.

The list of suggestions is endless. However, the point here is not to provide recipes but to highlight opportunities for progress in enhancing the place we live in. It has been the purpose of this dissertation to highlight and envision place-making projects that further increase our awareness of nature and its ecological complexities, rather than alienate us from them; ways to shape a more diverse and complex reality, rather than a dull and monotonous one; ways to engage a more diverse group of people in the transformation of this reality, rather than mechanisms to delegate this task to an increasingly specialized bunch; and finally, ways to measure progress that transcend sectarian interests, and instead respond to common, if contested, interests, desires and disagreements.

The conceptual framework for action and reflection offered herein emphasizes the need for a national debate that focuses on place-making as an articulating concept that links development initiatives and the territorial transformation of the country. In

addition it also calls for public and private reflection upon the intrinsic moral character implied by existing place-making projects, the values they reproduce and the way they socialize the natural realm, transform landscapes and lifestyles. All this with the goal of producing concrete alternatives rooted in the geographic reality of the Costa Rican place and its international context.

When common, open-ended, intrinsic goals in place-making are sought, a common direction for different institutional arrangements prevails and predates the existence of particular institutional plans and scalar agendas. This observation reinforces the argument that the integration of conservation and development cannot be the outcome of the coordination of separately conceived policies of conservation – envisioned by the Ministry of Environment and conservation NGO's, and development policies – conceived by the productive sector. Rather, these two should be complementary articulations of a place-making project directed and put in place by civil society and administered by elected representatives.

This dynamic, incomplete project and the intrinsic, open-ended virtues guiding it would provide a direction towards progress and a reflection mechanism for the continuous (re)formulation of policies at all scales of action and among diverse institutional arrangements. Acknowledgment of the need for endless civil reflection upon the values and ideals informing our conceptions of progress, highlights the idea that development is not so much about technocratic achievements where terms like

efficiency, good governance and sustainability are paramount; but rather, a humanist process that requires the advancement of critical awareness as a gift and means to intrinsically value and respect human beings and nature as key agents shaping our shared opportunities for continued progress.

VII. BIBLIOGRAPHY

UNPUBLISHED SOURCES

Manuscripts and Papers

Boza, M. 2005. *Reforma a la ley de creación del servicio de parques nacionales, No. 6084 del 24 de Agosto de 1977*.Unpublished Manuscript. 13 pages.

Brown, J. C. 1990. *The Organization for Tropical Studies: the development of its relationship with Costa Rica over three decades*. Center for Latin American Studies, University of Kansas. Unpublished Manuscript.

CRISOL. 2005. *Aportes para una nueva Costa Rica inclusiva y solidaria.* Unpublished Manuscript.

Herrera, M. 2006. *Protected areas and forest conservation in Costa Rica*. Department of Geography, University of Kansas. Term paper for the course Principles of Geographic Information Systems (GIS 658).

Inman, Crist, Mesa, N., Oleas Reyna, J. 1998. *Impacts on developing countries of changing production and consumption patterns in developed countries: the case of ecotourism in Costa Rica*. INCAE and United Nations Environment Programme in conjunction with Institute for Environmental Studies Vrije Universiteit Amsterdam.

Sayer, A. 2007. *Who's afraid of critical social science?* Department of Sociology, Lancaster University, UK. Submitted for Publication.

Williams, D. 2004. *Transformations in the environmental economy of the upper savegre valley, Costa Rica, 1952-2002*. Paper read at American Society for Environmental History Meeting, 1 April, at Victoria, B.C., Canada.

Theses and Graduation Projects

Baldi Salas, Norberto, *Black Creek (Cat U.C.R. N0 467): Primeras interpretaciones arqueológicas de un modo de vida costero en el Caribe sur de Costa Rica*, Graduation Project, Departmernt of Anthropology, School of Anthropology and Sociology, University of Costa Rica, 2001.

Cruz Zúñiga, Nidia, *Evaluación del sistema de áreas verdes y recreativas en el sector noreste del Cantón de Desamparados y sus alrededores*, Graduation Project, School of Civil Engineering, University of Costa Rica, 2002.

Hernández Mora, Victoria E. *La asistencia oficial al desarrollo y su relación con la conservación ambiental: una primera aproximación*, Masters Thesis, Graduate Program in Business Administration, University of Costa Rica. 2003.

Jirón Nielsen, Raquel, *Impacto del desarrollo turístico en el recurso hídrico de Tamarindo, Guanacaste*. Graduation Project, School of Civil Engineering, University of Costa Rica. 2000

Sánchez Pérez, Marcos Albán, *Análisis de la capacidad de la red de alcantarillado sanitario y la evacuación de las aguas sanitarias en los distritos de San Pedro, Mercedes y Sabanilla (Cantón de Montes de Oca)*. Graduation Project, School of Civil Engineering, University of Costa Rica, 2003.

PUBLISHED SOURCES

Articles in Academic Journals

Adams, W. M., R. Aveling, D. Brockington, B. Dickson, J. Elliott, J. Hutton, D. Roe, B. Vira, and W. Wolmer. 2004. Biodiversity conservation and the eradication of poverty. *Science* 306 (5699):1146-1149.

Anderson, E. P., M. C. Freeman, and C. M. Pringle. 2006. Ecological consequences of hydropower development in Central America: impacts of small dams and water diversion on neotropical stream fish assemblages. *River Research and Applications* 22 (4):397-411.

Anderson, E. P., C. M. Pringle, and M. Rojas. 2006. Transforming tropical rivers: an environmental perspective on hydropower development in Costa Rica. *Aquatic Conservation-Marine and Freshwater Ecosystems* 16 (7):679-693.

Arford, M. R., and S. P. Horn. 2004. Pollen evidence of the earliest maize agriculture in Costa Rica. *Journal of Latin American Geography* 31 (1):108-115.

Batterbury, S., T. Forsyth, and K. Thomson. 1997. Environmental transformations in developing countries: hybrid research and democratic policy. *Geographical Journal* 163:126-132.

Batterbury, S. P. J., and J. L. Fernando. 2006. Rescaling governance and the impacts of political and environmental decentralization: an introduction. *World Development* 34 (11):1851-1863.

Bebbington, A. J. 2000. Reencountering development: livelihood transitions and place transformations in the Andes. *Annals of the Association of American Geographers* 90 (3):495-520.

———. 2003. global networks and local developments: agendas for development geography. *Tijdschrift voor Economische en Sociale Geografie* 94 (3):297-309.

———. 2004. NGOs and uneven development: geographies of development intervention. *Progress in Human Geography* 28 (6):725-745.

Bebbington, A. J., and S. P. J. Batterbury. 2001. Transnational livelihoods and landscapes: political ecologies of globalization. *Ecumene* 8 (4):369-380.

Bebbington, A. J. and D.H. Bebbington. 2001. Development alternatives: practice, dilemmas and theory. *Area* 33 (1):7-17.

Bebbington, A. J., and U. Kothari. 2006. Transnational development networks. *Environment and Planning A* 38 (5):849-866.

Blaikie, P. 2000. Development, post-, anti-, and populist: a critical review. *Environment and Planning A* 32:1033-1050.

Brechin, S. R., P. R. Wilshusen, C. L. Fortwangler, and P. C. West. 2002. Beyond the square wheel: toward a more comprehensive understanding of biodiversity conservation as social and political process. *Society & Natural Resources* 15 (1):41-64.

Bridge, G., P. McManus, and T. Marsden. 2003. The next new thing? Biotechnology and its discontents. *Geoforum* 34 (2):165-174.

Brown, J.C. 2001. Responding to deforestation: productive conservation, the World Bank, and beekeeping in Rondonia, Brazil. *Professional Geographer* 53 (1):106-118.

Brown, J. C., S. W. Desposato, and D. S. Brown. 2005. Paving the way to political change: decentralization of development in the Brazilian Amazon. *Political Geography* 24 (1):39-52.

Brown, J. C., and M. Purcell. 2005. There's nothing inherent about scale: political ecology, the local trap, and the politics of development in the Brazilian Amazon. *Geoforum* 36 (5):607-624.

Brown, L. A. 1999. Change, continuity, and the pursuit of geographic understanding. *Annals of the Association of American Geographers* 89 (1):1-25.

Bryant, R. L. 1998. Power, knowledge and political ecology in the third world: a review. *Progress in Physical Geography* 22 (1):79-94.

Butz, W. P., and B. B. Torrey. 2006. Some frontiers in social science. *Science* 312 (5782):1898-1900.

Campbell, L. M. 2002. Conservation narratives in Costa Rica: conflict and co-existence. *Development and Change* 33:29-56.

———. 2007. Local conservation practice and global discourse: A political ecology of sea turtle conservation. *Annals of the Association of American Geographers* 97 (2):313-334.

Carolan, M. S. 2006a. Conserving nature, but to what end? Conservation policies and the unanticipated ecologies they support. *Organization & Environment* 19 (2):153-170.

———. 2006b. The values and vulnerabilities of metaphors within the environmental sciences. *Society & Natural Resources* 19 (10):921-930.

Castree, N. 2002. Environmental issues: from policy to political economy. *Progress in Human Geography* 26 (3):357-365.

———. 2003a. Bioprospecting: from theory to practice (and back again). *Transactions of the Institute of British Geographers* 28 (35-55).

———. 2003b. Environmental issues: relational ontologies and hybrid politics. *Progress in Human Geography* 27 (2):203-211.

———. 2003d. Commodifying what nature? *Progress in Human Geography* 27 (3):273-297.

———. 2005a. The epistemology of particulars: human geography, case studies and 'context'. *Geoforum* 36:541-544.

———. 2005b. From neoliberalism to neoliberalisation: consolations, confusions, and necessary illusions. *Environment and Planning A* 38:1-6.

Charpentier, C. 2001. Participación social y organización en la rehabilitación de la cuenca de Río Segundo. *Ciencias Ambientales*, December, 24-32.

Clark, D. A. 2004. Tropical forests and global warming: slowing it down or speeding it up? *Frontiers in Ecology & the Environment* 22 (2):73-80.

———. 2007. Detecting the responses of tropical forests to global climatic and atmospheric change: current challenges and a way forward. *Biotropica* 39:4-19.

Clark, D. A., S. C. Piper, C. D. Keeling, and D. B. Clark. 2003. Tropical rain forest tree growth and atmospheric carbon dynamics linked to interannual temperature variation 1984-2000. *Proceedings of the National Academy of Sciences of the United States of America* 100 (10):5852-5857.

Clark, D. B., and D. A. Clark. 2006. Annual tree growth, mortality, physical condition and microsite in an old-growth lowland tropical rain forest, 1983-2000. *Ecology* 87:2132.

Coase, R. 1960. The problem of social cost. *The Journal of Law and Economics* 3:1-44.

Collinge, C. 2006. Flat ontology and the deconstruction of scale: a response to Marston, Jones and Woodward. *Transactions of The Institute of British Geographers* 31 (2):244-251.

Corbridge, S. 1993. Marxisms, modernities, and moralities: development praxis and the claims of distant strangers. *Environment and Planning D: Society and Space* 11:449-472.

Doolittle, W. E. 2004. Gardens are us, we are nature: Transcending antiquity and modernity. *Geographical Review* 94 (3):391-404.

Entrikin, J. N. 2002. Democratic place-making and multiculturalism. *Geografiska Annaler* 84 B (1):19-25.

Escobar, A. 1996. Constructing nature - elements for a post-structuralist political ecology. *Futures* 28 (4):325-343.

———. 1998. Whose knowledge, whose nature? Biodiversity, conservation, and the political ecology of social movements. *Journal of Political Ecology* 5:53-78.

———. 2001. Culture sits in places. Reflections on globalism and subaltern strategies of globalization. *Journal of Political Geography* 20:139-174.

———. 2007. The 'ontological turn' in social theory. A commentary on 'Human geography without scale', by Sallie Marston, John Paul Jones II and Keith Woodward. *Transactions of the Institute of British Geographers* 32:106-111.

Gambini, B. 2006. Cultural assumptions against sustainability: an international survey. *Journal of Geography in Higher Education* 30 (2):263-279.

González, E. 2001. Alfabetización ambiental ante el coma de la educación ambiental. *Ciencias Ambientales*, December, 15-23.

Gough, J. 2004. Changing scale as changing class relations: variety and contradiction in the politics of scale. *Political Geography* 23:185-211.

Gray, L. C., and W. G. Moseley. 2005. A geographical perspective on poverty-environment interactions. *Geographical Journal* 171:9-23.

Hannah, M. G. 1999. Skeptical realism: from either/or to both-and. *Environment and Planning D: Society and Space* 17:17-34.

Hardin, G. 1968. The tragedy of the commons. *Science* 162:1243-8.

Harris, F., and C. Twyman. 2003. Landscapes of change: socio-environmental interactions in developing areas. *Geographical Journal* 169:326-327.

Hecht, S. B., S. Kandel, I. Gomes, N. Cuellar, and H. Rosa. 2006. Globalization, forest resurgence, and environmental politics in El Salvador. *World Development* 34 (2):308-323.

Herlihy, P. H. 2003. Participatory research mapping of indigenous lands in Darien, Panama. *Human Organization* 62 (4):315-331.

Herlihy, P. H., and G. Knapp. 2003. Maps of, by, and for the peoples of Latin America. *Human Organization* 62 (4):303-314.

Hernandez, C. E., and S. G. Witter. 1996. Evaluating and managing the environmental impact of banana production in Costa Rica: a systems approach. *Ambio* 25 (3):171-178.

Himmelgreen, D. A., N. Romero-Daza, M. Vega, H. Brenes-Cambronero, and E. Amador. 2006. "The tourist season goes down but not the prices." Tourism and food insecurity in rural costa rica. *Ecology of Food and Nutrition* 45 (4):295-321.

Hobbs, R. J., and L. F. Huenneke. 1992. Disturbance, diversity, and invasion - implications for conservation. *Conservation Biology* 6 (3):324-337.

Hoefle, S. W. 2006. Eliminating scale and killing the goose that laid the golden egg? *Transactions of The Institute of British Geographers* 31 (2):238-243.

Horn, S., and L. Kennedy. 2001. Pollen evidence of maize cultivation 2700 BP at La Selva biological station, Costa Rica. *Biotropica* 33:191-6.

Jackiewicz, E. L. 2006. Community-centered globalization: modernization under control in rural Costa Rica. *Latin American Perspectives* 33 (151):136-146.

Janzen, D. 1999. Gardenification of tropical conserved wildlands: multitasking, multicropping, and multiusers. *Proceedings of the National Academy of Sciences*. 96:5987-5994.

Jonas, A. E. G. 2006. Pro scale: further reflections on the 'scale debate' in human geography. *Transactions of the Institute of British Geographers* 31 (3):399-406.

Jones III, J. P., K. Woodward, and S. A. Marston. 2007. Situating flatness. *Transactions of the Institute of British Geographers* 32:264-276.

Kates, R. W. 1987. The human environment: the road not taken, the road still beckoning. *Annals of the Association of American Geographers* 77 (4):525-534.

Katz, C., and A. Kirby. 1991. In the nature of things - the environment and everyday life. *Transactions of The Institute of British Geographers* 16 (3):259-271.

Kiely, R. 1999. The last refuge of the noble savage? A critical assessment of post-development theory. *The European Journal of Development Research* 11 (1):30-55.

Klepeis, P., and P. Laris. 2006. Contesting sustainable development in Tierra del Fuego. *Geoforum* 37 (4):505-518.

Kohlhepp, G. 2005. Scientific findings of Alexander von Humboldt's expedition into the Spanish-American Tropics (1799-1804) from a geographical point of view. *Anais da Academia Brasileira de Ciencias* 77 (2):325-342.

Lawson, V. A. a. L. S. 1990. Realism and the practice of geography. *Professional Geographer* 42 (1):13-20.

———. 1991. On critical realism, human geography, and arcane sects! *Professional Geographer* 43 (2):231-233.

Lehoucq, F. 2005. Costa Rica: paradise in doubt. *Journal of Democracy* 16(3):140-154.

Leitner, H., and B. Miller. 2007. Scale and the limitations of ontological debate: a commentary on Marston, Jones and Woodward. *Transactions of the Institute of British Geographers* 32:116-125.

Liverman, D. 2004. Who governs, at what scale and at what price? Geography, environmental governance, and the commodification of nature. *Annals of the Association of American Geographers* 94 (4):734-738.

Liverman, D. M., and S. Vilas. 2006. Neoliberalism and the environment in Latin America. *Annual Review of Environment And Resources* 31:327-363.

Lovejoy, T. E. 2006. Protected areas: a prism for a changing world. *Trends in Ecology & Evolution* 21 (6):329-333.

Macedo, J. 2004. City profile: Curitiba. *Cities* 21 (6):537-549.

Mäki, U. a. P. O. 2004. The narrow notion of realism in human geography. *Environment and Planning A* 36 (1755-1776).

Marston, S. A. 2000. The social construction of scale. *Progress in Human Geography* 24 (2):219-242.

Marston, S. A., J. P. Jones, and K. Woodward. 2005. Human geography without scale. *Transactions of the Institute of British Geographers* 30 (4):416-432.

Matthews, R., and P. Selman. 2006. Landscape as a focus for integrating human and environmental processes. *Journal of Agricultural Economics* 57 (2):199-212.

May, R. M. 1994. Ecological science and the management of protected areas. *Biodiversity and Conservation* 3 (5):437-448.

McAfee, K. 1999. Selling nature to save it? *Environment and Planning A: Society and Space* 17:133-154.

McCall, M. K., and P. A. Minang. 2005. Assessing participatory GIS for community-based natural resource management: claiming community forests in Cameroon. *The Geographical Journal* 171 (4):340-356.

Miller, M. J. 2006. Biodiversity policy making in Costa Rica: pursuing indigenous and peasant rights. *The Journal of Environment Development* 15 (4):359-381.

Miranda, M., C. Dieperink, and P. Glasbergen. 2006. Costa Rican environmental service payments: the use of a financial instrument in participatory forest management. *Environmental Management* 38 (4):562-571.

Myers, G.A. 2002. Local communities and the new environmental planning: a case study from Zanzibar. *Area* 34 (2):149-159.

Myers, N., R. A. Mittermeier, C. G. Mittermeier, G. A. B. da Fonseca, and J. Kent. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403 (6772):853-858.

Nathrop, L., and S. Horn. 1996. Pre-Columbian agriculture and forest disturbance in Costa Rica: paleobotanical evidence from two lowland tropical forest lakes. *Heliocene* 6:289-299.

Nel, E., and T. Binns. 2003. Decentralising development in South Africa. *Geography* 88:108-116.

Nightingale, A. 2003. Nature-society and development: social, cultural and ecological change in Nepal. *Geoforum* 34 (4):525-540.

———. 2006b. The nature of gender: work, gender, and environment. *Environment And Planning D-Society & Space* 24 (2):165-185.

Nordhaus, W. D. 2006. Geography and macroeconomics: new data and new findings. *Proceedings of the National Academy of Sciences of the United States of America* 103 (10):3510-3517.

Northrop, L. A., and S. P. Horn. 1996. PreColumbian agriculture and forest disturbance in Costa Rica: paleoecological evidence from two lowland rainforest lakes. *Holocene* 6:289-299.

Nygren, A. 2000. Development discourses and peasant-forest relations: natural resource utilization as social process. *Development and Change* 31:11-34.

———. 2005. Community-based forest management within the context of institutional decentralization in Honduras. *World Development* 33 (4):639-655.

Pagiola, S., P. Agostini, J. Gobbi, C. de Haan, M. Ibrahim, E. Murgueitio, E. Ramirez, M. Rosales, and J. P. Ruiz. 2005. Paying for biodiversity

conservation services - experience in Colombia, Costa Rica, and Nicaragua. *Mountain Research and Development* 25 (3):206-211.

Parayil, G., and F. Tong. 1998. Pasture-led to logging-led deforestation in the Brazilian Amazon: The dynamics of socio-environmental change. *Global Environmental Change-Human and Policy Dimensions* 8 (1):63-79.

Perreault, T., and P. Martin. 2005. Geographies of neoliberalism in Latin America - Introduction. *Environment and Planning A* 37 (2):191-201.

Pfeffer, M. J., J. W. Schelhas, and C. Meola. 2006. Environmental globalization, organizational form, and expected benefits from protected areas in Central America. *Rural Sociology* 71 (3):429-450.

Pounds, J. A. 2001. Climate and amphibian declines. *Nature* 410 (6829):639-640.

Pounds, J. A., M. R. Bustamante, L. A. Coloma, J. A. Consuegra, M. P. L. Fogden, P. N. Foster, E. La Marca, K. L. Masters, A. Merino-Viteri, R. Puschendorf, S. R. Ron, G. A. Sanchez-Azofeifa, C. J. Still, and B. E. Young. 2006. Widespread amphibian extinctions from epidemic disease driven by global warming. *Nature* 439 (7073):161-167.

Power, M., G. Mohan, and C. Mercer. 2006. Postcolonial geographies of development: introduction. *Singapore Journal of Tropical Geography* 27 (3):231-234.

Pratt, A. 1995. Putting critical realism to work: the practical implications for geographical research. *Progress in Human Geography* 19 (1):61-74.

Purcell, M., and J. C. Brown. 2005. Against the local trap: scale and the study of environment and development. *Progress in Development Studies* 5 (4):279-297.

Quesada-Mateo, C. and V. Solís-Rivera. 1990. Costa Rica's national strategy for sustainable development: a summary. *Futures* 22 (4):396-416.

Radcliffe, S. A. 2005. Development and geography: towards a postcolonlial development geography? *Progress in Human Geography* 29 (3):291-298.

Raghuram, P., and C. Madge. 2006. Towards a method for postcolonial development geography? Possibilities and challenges. *Singapore Journal of Tropical Geography* 27 (3):270-288.

Randall, A. 1983. The problem of market failure. *Natural Resources Journal* 23 (January):pp. 131-48.

Reynolds-Vargas, J., J. Fralle-Merino, and R. Hirata. 2006. Trends in nitrate concentrations and determination of its origin using stable isotopes (O-18 and N-15) in groundwater of the western Central Valley, Costa Rica. *Ambio* 35 (5):229-236.

Robbins, P. 2001. Tracking invasive land covers in India, or why our landscapes have never been modern. *Annals of the Association of American Geographers* 91 (4):637-659.

———. 2003b. Political ecology in political geography. *Political Geography* 22 (6):641-645.

Robbins, P., K. McSweeney, T. Waite, and J. Rice. 2006. Even conservation rules are made to be broken: Implications for biodiversity. *Environmental Management* 37 (2):162-169.

Robbins, P., A. Polderman, and T. Birkenholtz. 2001. Lawns and toxins - an ecology of the city. *Cities* 18 (6):369-380.

Roberts, J. M. 2001. Realistic spatial abstraction? Marxist observations of a claim within critical realist geography. *Progress in Human Geography* 25 (4):545-567.

Robinson, J. G. 2006. Conservation biology and real-world conservation. *Conservation Biology* 20 (3):658-669.

Sack, R.D. 1999. A sketch of a geographic theory of morality. *Annals of the Association of American Geographers* 89 (1):26-44.

———. 2001a. The geographic problematic: empirical issues. *Norwegian Journal of Geography* 55 (3):107-116.

———. 2001b. The geographic problematic: moral issues. *Norwegian Journal of Geography* 55 (3):116-125.

Sánchez-Azofeifa, A., A. Pfaff, J. A. Robalino, and J. P. Boomhower. 2007. Costa Rica's payment for environmental services program: intention, implementation, and impact. *Conservation Biology* 21 (5):1165-1173.

Sánchez-Azofeifa, A., R.C. Harriss and D.L. Skole. 2001. Deforestation in Costa Rica: a quantitative analysis using remote sensing imagery. *Biotropica* 33 (3):378-384.

Sánchez-Azofeifa, A., B. Rivard, J. Calvo, and I. Moorthy. 2002. Dynamics of tropical deforestation around national parks: remote sensing of forest change on the Osa Peninsula of Costa Rica. *Mountain Research and Development* 22 (4):352-358.

Sánchez, V. 2001. Gestión y educación ambiental. *Ciencias Ambientales*, December, 4-14.

Sayer, A. 1991. Behind the locality debate: deconstructing geography's dualisms. *Environment and Planning A* 23:283-308.

———. 2004. Realisms through thick and thin. *Environment and Planning A* 36:1776-1789.

Schelhas, J., and G. A. Sanchez-Azofeifa. 2006. Post-frontier forest change adjacent to Braulio Carrillo National Park, Costa Rica. *Human Ecology* 34 (3):407-431.

Schroeder, R. A., K. S. Martin, and K. E. Albert. 2006. Political ecology in North America: Discovering the Third World within? *Geoforum* 37 (2):163-168.

Scoones, I. 1999. New ecology and the social sciences: what prospects for a fruitful engagement? *Annual Review of Anthropology* 28:479-507.

Seabloom, E. W., A. P. Dobson, and D. M. Stoms. 2002. Extinction rates under nonrandom patterns of habitat loss. *Proceedings Of The National Academy Of Sciences Of The United States Of America* 99 (17):11229-11234.

Segura-Bonilla, O. 2004. Agenda ambiental del agua en Costa Rica. *Revista Geográfica de Américа Central* (40):39-50.

Sekercioglu, C. H., P. R. Ehrlich, G. C. Daily, D. Aygen, D. Goehring, and R. F. Sandi. 2002. Disappearance of insectivorous birds from tropical forest fragments. *Proceedings of the National Academy of Sciences of the United States of America* 99 (1):263-267.

Sheil, D., and D. Burslem. 2003. Disturbing hypotheses in tropical forests. *Trends in Ecology & Evolution* 18 (1):18-26.

Sierra, R., and E. Russman. 2006. On the efficiency of environmental service payments: A forest conservation assessment in the Osa Peninsula, Costa Rica. *Ecological Economics* 59:131-141.

Silva, E. 2003. Selling sustainable development and shortchanging social ecology in costa rican forest policy. *Latin American Politics and Society* 45 (3):93-127.

Simon, D. 2006. Separated by common ground? Bringing (post)development and (post)colonialism together. *Geographical Journal* 172:10-21.

Smith, D. 2003. Participatory mapping of community lands and hunting yields among the Buglé of Western Panama. *Human Organization* 62 (4):332-343.

Smith, D. M. 1998. Homo geographicus. *Progress in Human Geography* 22 (4):607-610.

———. 2000. Moral progress in human geography: Trascending the Place of Good Fortune. *Progress in Human Geography* 24 (1):1-18.

Sneddon, C., R. B. Howarth, and R. B. Norgaard. 2006. Sustainable development in a post-Brundtland world. *Ecological Economics* 57 (2):253-268.

Sneddon, C. S. 2000. 'Sustainability' in ecological economics, ecology and livelihoods: a review. *Progress In Human Geography* 24 (4):521-549.

Stuart, S. N., J. S. Chanson, N. A. Cox, B. E. Young, A. S. L. Rodrigues, D. L. Fischman, and R. T. Waller. 2005a. Response to comment on "Status and trends of amphibian declines and extinctions worldwide". *Science* 309 (5743).

Stuart, S. N., J. S. Chanson, N. A. Cox, B. E. Young, A. S. L. Rodrigues, D. L. Fischman, and R. W. Waller. 2004. Status and trends of amphibian declines and extinctions worldwide. *Science* 306 (5702):1783-1786.

———. 2005b. The past and future of extant amphibians - Reply. *Science* 308 (5718):50-50.

Swyngedouw, E. 2007. Technonatural revolutions: the scalar politics of Franco's hydro-social dream for Spain, 1939-1975. *Transactions of the Institute of British Geographers* 32 (1):9-28.

Swyngedouw, E., and N. C. Heynen. 2003. Urban political ecology, justice and the politics of scale. *Antipode* 35 (5):898-918.

Tuan, Y.F. 1991. A view of Geography. *Geographical Review* 81 (1):99-107.

———. 2001. Life as as field trip. *Geographical Review* 91 (1/2 Doing Fieldwork):41-45.

Van Laake, P. E., and A. Sánchez-Azofeifa. 2004. Focus on deforestation: zooming in on hot spots in highly fragmented ecosystems in Costa Rica. *Agriculture, Ecosystems and Environment* 102:3-15.

Vayda, A. P. 1983. Progressive contextualization: methods for research in human ecology. *Human Ecology* 11 (3):265-281.

Vayda, A. P. and B. B. Walters. 1999. Against political ecology. *Human Ecology* 27 (1):167-179.

Wai-chung Yeung, H. 1997. Critical realism and realis research in human geography: a method or a philosophy in search of a method? *Progress in Human Geography* 21 (1):51-74.

Walker, P. A. 2005. Political ecology: where is the ecology? *Progress in Human Geography* 29 (1):73-82.

———. 2006. Political ecology: where is the policy? *Progress in Human Geography* 30 (3):382-395.

———. 2007. Political ecology: where is the politics? *Progress in Human Geography* 31 (3):363-369.

Wall, G. 1997. Is ecotourism sustainable? *Environmental Management* 21 (4):483-491.

West, P., and D. Brockington. 2006. An anthropological perspective on some unexpected consequences of protected areas. *Conservation Biology* 20 (3):609-616.

Wilbanks, T. J. 2003. Integrating climate change and sustainable development in a place-based context. *Climate Policy* 3 (S1):S147-S154.

Zimmerer, K. S. 1993. Soil-erosion and social (dis)courses in Cochabamba, Bolivia - perceiving the nature of environmental degradation. *Economic Geography* 69 (3):312-327.

———. 1994. Human-geography and the new ecology - the prospect and promise of integration. *Annals of the Association of American Geographers* 84 (1):108-125.

———. 2000. The reworking of conservation geographies: nonequilibrium landscapes and nature-society hybrids. *Annals of the Association of American Geographers* 90 (2):356-369.

———. 2006a. Cultural ecology: at the interface with political ecology - the new geographies of environmental conservation and globalization. *Progress in Human Geography* 30 (1):63-78.

———. 2007. Cultural ecology (and political ecology) in the 'environmental borderlands': exploring the expanded connectivities within geography. *Progress in Human Geography* 31 (2):227-244.

Zimmerer, K. S., R. E. Galt, and M. V. Buck. 2004. Globalization and multi-spatial trends in the coverage of protected-area conservation (1980-2000). *Ambio* 33 (8):520-529.

Articles in Edited Books

Brenes, G. 2004. Segregación residencial de los inmigrantes nicaragüenses en Costa Rica. In *Costa Rica a la luz del Censo del 2000*, ed. L. Rosero-Bixby, 399-426. San José: CCP.

Braun, B. 2004. Nature and Culture: On the Career of a False Problem. In *A Companion to Cultural Geography*, eds. J. Duncan, N. Johnson and R. Schein, 151-179. Malden, MA: Blackwell.

Brown, J.C. 2006. Productive conservation and its representation: the case of beekeeping in the Brazilian Amazon. In *Globalization and the New Geographies of Conservation*, ed. K. S. Zimmerer. Chicago: University of Chicago Press.

Castree, N. 2003c. Geographies of nature in the making. In *Handbook of Cultural Geography*, eds. K. Anderson, M. Domosh, N. Thrift and S. Pile, 168-183. London; Thousand Oaks: Sage.

Cresswell, T. 2005. Moral geographies. In *Cultural Geography: A Critical Dictionary of Key Concepts*, eds. D. Atkinson, P. Jackson, D. Sibley and N. Washbourne. New York and London: I.B. Tauris.

Dixon, D. P., and J. P. Jones III. 2004. Poststructuralism. In *A Companion to Cultural Geography*, eds. J. Duncan, N. Johnson and R. Schein, 79-107. Malden, MA: Blackwell.

Fernández González, Á. 1994. Ambiente y desarrollo en Costa Rica: el debate a principios de los noventa. In *Café y Desarrollo Sostenible: Del Cultivo Agroquímico a la Producción Orgánica en Costa Rica*, eds. J. K. Boyce, Á. Fernández, E. Fürst and O. Segura B., 25-79. Heredia: EUNA.

Fullerton, D., and R. Stavins. 2000. How economists see the environment. In *Economics of the Environment*, ed. R. Stavins, 3-8. New York: Norton & Company.

Gómez, M., and J. Madrigal. 2004. Migración interna en Costa Rica en el período 1927-2000. In *Costa Rica a la luz del Censo del 2000*, ed. L. Rosero-Bixby, 499-534. San José: CCP.

Gutiérrez, M. 2004. Exploración de datos censales sobre la pobreza, aproximada según Necesidades Básicas Insatisfechas (NBI) en la Costa Rica actual. In *Costa Rica a la luz del Censo del 2000*, ed. L. Rosero-Bixby, 175-204. San José: CCP.

King, A. 2003. Cultures and Spaces of Postcolonial Knowledges. In *Handbook of Human Geography*, eds. K. Anderson, M. Domosh, N. Thrift and S. Pile, 381-397. London; Thousand Oaks: Sage.

McCusker, B., and D. Weiner. 2003. GIS representations of nature, political ecology, and the study of land use and land cover change in South Africa. In *Political Ecology: An integrative approach to geography and environment development studies*, ed. K. S. Zimmerer. New York and London: The Guilford Press.

Méndez-Fonseca, F., and J. D. Trejos-Solórzano. 2004. Costa Rica: un mapa de carencias críticas para el año 2000. In *Costa Rica a la luz del Censo del 2000*, ed. L. Rosero-Bixby, 205-233. San José: CCP.

Mitchell, D. 2003. Dead labor and the political economy of landscape - California living, California dying. In *Handbook of Cultural Geography*, eds. K. Anderson, M. Domosh, N. Thrift and S. Pile, 233-247. London; Thousand Oaks: Sage.

Picado, G., and V. Salazar. 2004. Análisis de la cobertura del seguro de salud a partir del censo de población 2000. In *Costa Rica a la luz del Censo del 2000*, ed. L. Rosero-Bixby. San José: CCP.

Robbins, P. 2003a. Fixed categories in a portable landscape: the causes and consequences of land cover categorization. In *Political Ecology: An integrative approach to geography and environment development studies*, ed. K. S. Zimmerer. New York and London: Guilford Press.

Rosero-Bixby, L. 2004b. Acceso y disponibilidad de servicios de salud en Costa Rica 2000. In *Costa Rica a la luz del Censo del 2000*, ed. L. Rosero-Bixby. San José: CCP.

Sayer, A. 1985. The difference that space makes. In *Social Relations and Spatial Structures*, eds. D. Gregory and J. Urry, 49-65. Basingstroke, Hampshire: Macmillan.

Slater, D. 2003. Beyond Euro-Americanism - democracy and post-colonialism. In *The Handbook of Cultural Geography*. London; Thousand Oaks.

Smith, J. M. 2004. Ethics and the human environment. In *A Companion to Cultural Geography*, eds. J. Duncan, N. Johnson and R. Schein, 209-219. Malden, MA: Blackwell.

Watts, M. 2003. Alternative modern - development as cultural geography. In *Handbook of Cultural Geography*, eds. K. Anderson, M. Domosh, N. Thrift and S. Pile, 434-453. London;Thousand Oaks: Sage.

Watts, M., and R. Peet. 2004. Liberating political ecology. In *Liberation Ecologies*, eds. R. Peet and M. Watts, 3-47. London: Routledge.

Zimmerer, K.S. 1996. Ecology as cornerstone and chimera in human geography. In *Concepts in Human Geography*, eds. E. C. et al., 161-188. Lanham, MD: Rowman and Littlefield Publishers.

Articles in Magazines

Chapin, M. 2004. A challenge to conservationists. *World Watch* (Nov.-Dec.):17-31.

Edwards, M. 1993. Russia: playing by new rules. *National Geographic*, (March): 4-21.

Hughes, C., and D. Hughes. 1983. Teeming life of a rainforest. *National Geographic* (January): 48-65.

Morell, V. 1999a. The variety of life. *National Geographic* (February): 6-31.

———. 1999b. In search of solutions. *National Geographic* (February): 72-87.

Stone, R. 2006. La larga sombra de Chernobyl. *National Geographic* (April): 98-119. (Spanish Edition).

Time Magazine. 1989. The good news: Costa Rica guards its forests. (January 2). Available from http://www.time.com/time/magazine/article/0,9171,956652,00.html

White, P. T. 1983. Rain Forests: Nature's Dwindling Treasures. *National Geographic*, (January): 2-47.

Articles in Op-Ed Newspaper Sections

Arias, O. 2008. Una buena noticia no es noticia. *La Nación* (February 3): 33A.

Castro, R. 2006. Cuba, Chile y Costa Rica: marca país. *La Nación Digital* (December 24). Available from http://www.nacion.com/ln_ee/2006/diciembre/24/opinion939675.html.

Cisneros, P., and I. Santos. 2008. Los espejismos de don Óscar. *La Nación*. (February 10): 25 A.

Quesada-Tristán, L. 2006. Rendición de cuentas y política ambiental. *La Nación Online* (April 4). Available from http://www.nacion.com/ln_ee/2006/abril/04/opinion8.html.

———. 2006. Minae ratifica deuda ambiental. *La Nación Online* (April 18). Available from http://www.nacion.com/ln_ee/2006/abril/18/opinion5.html.

Pacheco, F. 2007c. TLC y comercio del agua. La Nación Online (July 30). Available from http://www.nacion.com/ln_ee/2007/julio/30/opinion1184515.html.

Quirós, G. 2008. Poner la casa en orden. *La Nación Online* (February 26). Available from http://www.nacion.com/ln_ee/2008/febrero/26/opinion1439391.html.

Rodríguez, C. M. 2006. Defensora mal informada. *La Nación Online* (April 8). Available from http://www.nacion.com/ln_ee/2006/abril/08/opinion4.html.

Rossi, A. 2005. Por Gandoca Manzanillo. *La Nación Online* (January 22). Available from http://www.nacion.com/ln_ee/2005/enero/22/opinion3.html.

Solís, O. 2006. Estrategia Siglo XXI. *La Nación* (May 20): 32.

Newspaper Articles

Al Día, “Lo que estamos cometiendo es un suicidio colectivo”, October 4 2007, p.4A.

Diario Extra, “Mujeres llaman ‘chuchingas’ a diputados”, October 19 2007, p.4A.

Diario Extra, “Revenden entradas de Parque Nacional Manuel Antonio”, January 22 2008, p. 2A.

Informa-tico.com, “29 Poderosos se embolsaron miles de millones del Estado a la sombra del turismo”, May 29 2006
http://www.informa-tico.com/php/print.php?id=29-05-06011384

La Gaceta, March 22 2007, pp. 35-44

La Nación Online, “Presuntas exportaciones ficticias con CAT”, April 4 1997
http://www.nacion.com/ln_ee/1997/abril/04/pagina04.html

La Nación Online, “Arrestan a exportador por CAT”, September 5 1998
http://www.nacion.com/ln_ee/1998/septiembre/05/pais1.html

La Nación Online, “Líos rodearon vida de exportador”, November 2 1998
http://www.nacion.com/ln_ee/1998/noviembre/02/pais7.html

La Nación Online, “Consenso para indagar incentivos”, November 5 1998
http://www.nacion.com/ln_ee/1998/noviembre/05/pais10.html

La Nación Online, “Acuerdo para revisar incentivos”, November 13 1998
http://www.nacion.com/ln_ee/1998/noviembre/13/pais9.html

La Nación Online, “Ecologista deja lucha en Gandoca”, January 15 2005 -
http://www.nacion.com/ln_ee/2005/enero/15/pais7.html

La Nación, “País puede alcanzar desarrollo en los próximos 50 años”, April 6 2006, p.1A.

La Nación, “¿Dónde debería estar Costa Rica en el año 2050?”, April 6 2006, p.18A.

La Nación, “Presentación ‘Estrategia Siglo XXI’: Arias promete ‘tomar en serio’ plan de desarrollo”, April 7 2006, p.7A.

La Nación Online, “País pauta anuncio en inauguración del Mundial”, June 1 2006 -
http://www.nacion.com/ln_ee/2006/junio/01/pais3.html

La Nación Online, Balnearios, parques y zoológicos con poca atracción, January 31 2007 - http://www.nacion.com/ln_ee/2007/enero/31/pais965484.html

La Nación, “Cartago aguarda un millón de romeros”, August 1 2007, p. 8A.

La Nación, “Limón tendrá parque científico entre el bosque y playa Bonita”, August 7 2007, p.18A.

La Nación, “Microorganismos acaparan discusión sobre ley del TLC”, January 28 2008, p.18A.

La Nación, “Desorden amenaza reservas de agua en la costa del Pacífico”, February 3 2008, p.4A.

La Nación, “Salud clausurará hoy Hotel Allegro Papagayo”, February 5 2008, p. 12A.

La Nación, “Cazadores acosan vida silvestre en el occidente”, February 8 2008, Suplemento Alajuela, p.4.

La Nación, “AyA exige restringir permisos para construir pozos de agua”, February 8 2008, p. 4A.

La Nación Online, “AyA analiza calidad de aguas: Siete playas pueden perder bandera azul por contaminación”, February 8 2008 http://www.nacion.com/ln_ee/2008/febrero/08/pais1416313.html

La Nación, “ICE impulsa cuatro grandes represas para evitar apagones”, February 9 2008, pp.4-5A.

La Nación, “Empresarios aplauden estrategia eléctrica; ambientalistas la critican”, February 9 2008, p. 5A.

La Nación, “Aguas negras amenazan con destruir playas guanacastecas”, February 11 2008, pp. 4-5A.

Semanario Universidad, “Buscan 135,000 firmas para Ley del Recurso Hídrico”, February 14 2008, p. 6A.

Books

Adams, W. M. 2001. *Green Development. Environment and sustainability in the Third World*. 2nd. ed. New York: Routledge.

Bolaños Arquín, M., and M. Sánchez Pereira, eds. 1992. *Memoria del Seminario-Taller Prácticas Agrícolas Tradicionales: Un Medio Alternativo para el Desarrollo Rural Centroamericano*. San José: CICDAA, COPROALDE, UCR.

Botkin, D. B. 1990. *Discordant Harmonies: A new Ecology for the Twenty-First Century*. Oxford: Oxford University Press.

Carson, R. 1962. *Silent Spring*. New York: Houghton Mifflin.

Collier, A. 1994. *Critical Realism: An Introduction to Roy Bhaskar's Philosophy*. London and New York: Verso.

Cruickshank, J., ed. 2003. *Critical Realism: The Difference that it Makes*. London, New York: Routledge.

Defensoría de los Habitantes. 2006. *Informe de la Defensoría de los Habitantes en Relación con el Proyecto de Ley 16047*. San José: EUNED.

Diamond, J. 2005. *Collapse: how societies choose to fail or succeed*. New York: Viking.

Dussel, Enrique D. 1973. *América Latina: Dependencia y Liberación*. Buenos Aires: F. García Cambeiro.

Dussel, Enrique D. 1995. *The invention of the Americas : Eclipse of "the other" and the myth of modernity*. New York: Continuum.

Escobar, A.1995. *Encountering Development: The Making and Unmaking of the Third World*, Princeton Studies in Culture/Power/History. Princeton, NJ: Princeton University Press.

Esty, D. C., M. A. Levy, C. H. Kim, A. de Sherbinin, T. Srebotnjak, and V. Mara. 2008. *Environmental Performance Index*. New Haven: Yale Center for Environmental Law and Policy.

Evans, S. 1997. *The Green Republic: A Conservation History of Costa Rica*. Austin: University of Texas Press.

Fernández-Esquivel, P., and G. Alvarado-Induni. 2006. *Artesanos y Piedras: Herraminetas y Escultura Precolombina en Costa Rica*. San José: Fundación Museos del Banco Central.

Flores Silva, E. 2005. *Geografía de Costa Rica*. 3era ed. San José: EUNED.

Forsyth, T. 2003. *Critical Political Ecology*. London; New York: Routledge.

Fundación Neotrópica. 1988. *Desarrollo Socioeconómico y el Ambiente Natural de Costa Rica: Situación Actual y Perspectivas*. San José: Editorial Heliconia.

García Canclini, N. 1990. *Culturas Híbridas: Estrategias para Entrar y Salir de la Modernidad*. México D.F.: Grijalbo-Consejo Nacional para la Cultura y las Artes.

Giddens, A. 1984. *The Constitution of Society*. Berkeley: University of California.
———. 2002. *Runaway World*. New York: Routledge.

Hall, C. 1976. *El café y el Desarrollo Histórico Geográfico de Costa Rica*. San José: Editorial Costa Rica.

———. 1984. *Costa Rica: Una Interpretación Geográfica Con Perspectiva Histórica*. San José: Editorial Costa Rica.

Hall, C. A. S., ed. 2000. *Quantifying Sustainable Development: The Future of Tropical Economies*. San Diego and London: Academic Press.

Harvey, D. 1996. *Justice, Nature and the Geography of Difference*. Cambridge: Blackwell.

———. 2000. *Spaces of Hope*. Berkeley: University of California Press.

Herrera Villalobos, A. 2005. *Al Reencuentro de los Ancestros: Mwaing daamalut. Kokapoijmi*. Lourdes de Montes de Oca: ICER.

Hilje, L., W. Jiménez and Emilio Vargas. 2002. *Los Viejos y los Árboles*. San José: EUCR.

Holdridge, Leslie. 1967. *Life Zone Ecology*. Costa Rica: Tropical Science Center.

hooks, bell. 1994. *Teaching to Transgress. Education as the Practice of Freedom*. New York and London: Routledge.

Hubbard, P., R. Kitchin, and G. Valentine, eds. 2004. *Key thinkers on Space and Place*. London.

Island Press. 2007. *Millennium Ecosystem Assessment Toolkit*. Washington D.C.: IP.

IUCN. 1980. *The World Conservation Strategy*. Geneva: International Union for Conservation of Nature and Natural Resources, United Nations Environment Programme, World Wildlife Fund.

Jacoby, K. 2003. *Crimes against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation*. Berkeley: University of California Press.

Lee, R., and D. M. Smith, eds. 2004. *Geographies and Moralities: International Perspectives on Development, Justice, and Place*. Malden, MA: Blackwell.

Massey, D. 1995. *Spatial Divisions of Labor: Social Structures and the Geography of Production*. New York: Routledge.

McDade, L. A., K. S. Bawa, H. A. Hespenheide, and G. S. Hartshorn, eds. 1994. *La Selva: Ecology and Natural History of a Neotropical Rain Forest*. Chicago, Illinois: University of Chicago Press.

McEvoy, A. 1986. *The Fisherman's Problem: Ecology and Law in the California Fisheries, 1850-1980*. Cambridge: Cambridge University Press.

Meza-Ocampo, T. A. 2001. *Geografía de Costa Rica: Geología, Naturaleza y Políticas Ambientales*. Cartago: Editorial Tecnológica de Costa Rica.

MIDEPLAN Ministerio de Planificación Nacional y Política Económica Costa Rica. 2007. *Plan Nacional de Desarrollo "Jorge Manuel Dengo Obregón"*. San José: MIDEPLAN.

MINAE Ministerio de Ambiente y Energía. 2000. *Estrategia Nacional de Conservación y Uso Sostenible de la Biodiversidad*. San José: MINAE.

Molina Jiménez, I. 2002. *Costarricense Por Dicha*. San José: EUCR.

Molina, I., and S. Palmer. 1997. *Historia de Costa Rica*. San Pedro de Montes de Oca: EUCR.

Morgan, K., and A. Sayer. 1988. *Microcircuits of Capital: 'Sunrise' Industry and Uneven Development*. Boulder: Westview.

Myers, G.A. 2005. *Disposable cities: Garbage, Governance, and Sustainable Development in Urban Africa.* Aldershot, Hampshire; Burlington, VT: Ashgate.

Nussbaum, M.C. 2000. *Women and Human Development: The Capabilities Approach*. Cambridge and New York: Cambridge University Press.

Nussbaum, M. C., and A. K. Sen. 1993. *The Quality of Life*. London and New Cork: Oxford University Press.

ODD Observatorio del Desarrollo. 2005. *Costa Rica en Cifras: 1985-2004*. San José: ODD.

Partido Acción Ciudadana. 2005. *Convocatoria a la Ciudadanía*. San José: PAC.

PASV Proyecto Agenda Siglo XXI. 2006. *Estrategia Siglo XXI: Conocimiento e innovación hacia el 2050 en Costa Rica*. Vol. I. San José: PASV.

PASV Proyecto Agenda Siglo XXI. 2006b. *Estrategia Siglo XXI: Conocimiento e innovación hacia el 2050 en Costa Rica*. Vol. II. San José: PASV.

Peet, R., and M. Watts, eds. 1996. *Liberation Ecologies*. 1st. ed. London; New York: Routledge.

———, eds. 2004. *Liberation Ecologies*. 2nd. ed. London; New York: Routledge.

PEN. 2005. *Onceavo Informe Estado de la Nación en Desarrollo Humano Sostenible*. San José: Programa Estado de la Nación.

———. 2006. *Duodécimo Informe Estado de la Nación en Desarrollo Humano Sostenible*. San José: Programa Estado de la Nación.

———. 2007. *Treceavo Informe Estado de la Nación en Desarrollo Humano Sostenible*. San José: Programa Estado de la Nación.

Pimm, S. L. 1991. *The Balance of Nature? Ecological Issues in the Conservation of Species and Communities*. Chicago: Chicago University Press.

Pollan, M. 2006. *The Omnivore's Dilemma*. New York: Penguin.

Quesada-Mateo, C., ed. 1989. *Estrategia de Conservación para el Desarrollo Sostenible de Costa Rica*. San José: Ministerio de Recursos Naturales, Energía y Minas Republica de Costa Rica.

Quesada, J. R., ed. 1999. *Proyecto Costa Rica Contemporánea: Raíces del Estado de la Nación*. San José: EUCR.

Rawls, J. 1971. *A Theory of Justice*. Cambridge and London: The Belknap Press of Harvard University Press.

Rodríguez-Vega.E. 2006. *Rodrigo Facio*. San José: EUNED.

Rosero-Bixby, L., ed. 2004a. *Costa Rica a la Luz del Censo del 2000*. San José: CCP.

Rossi, A. 1992. *La Loca de Gandoca*. San José: EDUCA.

Sachs, W., ed. 1992. *The Development Dictionary: A Guide to Knowledge as Power*. London and New York: Zed Books Ltd.

Sack, R. D. 1992. *Place Modernity and the Consumer's World*. Baltimore: Johns Hopkins University Press.

———. 1997. *Homo Geographicus: A Framework for Action, Awareness and Moral Concern*. Baltimore and London: Johns Hopkins University Press.

———. 2003. *A Geographical Guide to the Real and the Good*. London and New York: Routledge.

———, ed. 2002. *Progress, Geographical Essays*. Baltimore: The Johns Hopkins University Press.

Sayer, A. 1992. *Method in Social Science*. London and New York: Routledge.

———. 2000. *Realism and Social Science*. London: Sage.

———. 2005. *The Moral Significance of Class*. Cambridge: Cambridge University Press.

Sen, A. K. 1984. *Resources, Values and Development*. Oxford: Basil Blackwell.

———. 1999. *Development as Freedom*. 2000 ed. New York: Anchor Books.

Smith, A. 2003 ed. [originally published in 1776]. *The Wealth of Nations*. New York: Bantam Dell.

Smith, D.M. 2002. *Moral Geographies: Ethics in a World of Difference*. Edinburgh: Edinburgh University Press.

Smith, N. 1984. *Uneven Development: Nature, Capital, and the Production of Space*. New York: Blackwell.

Sojo, Carlos, 1992, *La Mano Visible del Mercado*, San José: Ediciones CRIES.

Tuan, Y. F. 1989. *Morality and Imagination: Paradoxes of Progress*. Madison, WN: University of Wisconsin Press.

———. 1998. *Escapism*. Baltimore: Johns Hopkins University Press.

Tucker, R.P. 2000. *Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World*. Berkeley and Los Angeles: University of California Press.

UNED-INBIO. 1994. *From Forest to Society: A New Costa Rican Model for Development in Alliance with Nature*. San José: EUNED.

van Ufford, P. Q., and A. K. Giri. 2003. *A Moral Critique of Development: In Search of Global Responsibilities*. London: Routledge.

Vargas-Ulate. 2002. *Geografía de Costa Rica*. San José: EUNED.

Williamson, J. 1990. *Latin American Adjustment: How Much Has Happenned?* Washington DC: Institute for International Economics.

Wolf, E. 1997. *Europe and the People without History*. 1997 ed. Berkeley and Los Angeles: University of California Press. Original edition, 1982.

World Comission on Environment and Development. 1987. *Our Common Future*. Oxford: Oxford University Press.

World Resources Institute. 2005. *Millennium Ecosystem Assessment*. Washington D.C.: WRI.

Worster, D. 1993. *The Wealth of Nature: Environmental History and the Ecological Imagination*. Oxford and New York: Oxford University Press.

———. 1994. *Nature's Economy: A History of Ecological Ideas*. 2nd. ed. Cambridge: Cambridge University Press.

Wright, A. L. 1990. *The Death Ramón González: the Modern Agricultural Dilemma*. Austin: University of Texas.

Zeledón, R. 2000. *Diez años del INBio: De una Utopía a una Realidad*. Heredia: Institutio Nacional de Biodiversidad.

———, ed. 2006b. *Globalization and the New Geographies of Conservation*. Chicago: University of Chicago Press.

Zimmerer, K. S., and T. J. Bassett. 2003. *Political Ecology: An Integrative Approach to Geography and Environment Development Studies*. New York: Guilford Press.

Zinn, H. 2003. *A People's History of the United States*: Harper Perennial.

Institucional Reports/Gray Literature

Adamson, M. 2006a. *Análisis y Evaluación de la Sostenibilidad del Sistema de Áreas Protegidas de Costa Rica Vol. I*. Centro de Estudios Económicos y Ambientales, 80 pages.

———. 2006b. *Análisis y Evaluación de la Sostenibilidad del Sistema de Áreas Protegidas de Costa Rica Vol. II*. Centro de Estudios Económicos y Ambientales, 73 pages.

Cabrera-Medaglia, J. 2005. *Diagnóstico del Marco Legal e Institucional en Materia de Biocomercio en Costa Rica*. INBio, 195 pages.

COMEX 2007a. *Costa Rica 2006, Principales productos de Exportación por Subpartida Arancelaria*, 1 page. Available from http://www.comex.go.cr/estadisticas/exportaciones/Principales%20Productos%20de%20exportacion%202006.pdf

———. 2007b. *Costa Rica: IED como Porcentaje del PIB 1980-2006*. 1 page. Available from http://www.comex.go.cr/estadisticas/inversion/IED%20x%20PIB%202006.pdf

———. 2007c, *Costa Rica: Balanza Comercial Total 1980-2006 (En millones de US$).*1 page. Available from http://www.comex.go.cr/estadisticas/balanza/Balanza%20Comercial%20Total%202006.pdf

———. 2008a. *Costa Rica: Exportaciones Totales, por Régimen Aduanero 1995-200*. 1 page. Availbable from http://www.comex.go.cr/estadisticas/exportaciones/Exports%20CR%202008%20Web-por%20regimen.pdf

———. 2008b. *Costa Rica Exportaciones per cápita 1980-2007*. 1 page. Available from http://www.comex.go.cr/estadisticas/exportaciones/Exports%20CR%202008%20Web-per%20capital.pdf

Conferencia Episcopal de Costa Rica 2007. *Comunicado de la Conferencia Episcopal de Costa Rica: Aprobación del Proyecto de Ley 16.123*. CECR, 4 pages.

Consejo Universitario UCR 2006. *Criterio sobre el proyecto de ley "Adhesión de Costa Rica al Tratado de Budapest sobre el reconocimiento del Depósito de Microorganismos a los fines del Procedimiento en Materia de Patentes"*. UCR, 2 pages.

Fürst, E., Moreno, M.L., García D. and E. Zamora 2004. *Sistematización y Análisis del Aporte de los parques Nacionales y Reservas Biológicas al Desarrollo Económico y Social en Costa Rica: Los Casos de los Parques Nacionales Chirripó, Cahuita y Volcan Poás*, Executive Summary. CINPE, 26 pages.

Fürst, E., Moreno, M.L., García D. and E. Zamora 2005. *Desarrollo y Conservación en Interacción: ¿Cómo y en Cuánto se Benefician la Economía y la Comunidad de las Áreas Silvestres Protegidas en Costa Rica?* INBio-CINPE Interinstitucional Project, 221 pages.

Guevara, A.L. and A.S. Huertas 2006. *Propuesta del Programa Nacional de Biocomercio de Costa Rica*. INBio, 78 pages.

ICT 2006. *Tourism Statistical Yearly Report 2005*. ICT, 70 pages. Available from http://www.visitcostarica.com/ict/paginas/statistics/Yearly_2005.pdf

INBio 2004. *Memoria Anual*. INBio, 56 pages.

INBio 2005. *Memoria Anual*. INBio, 40 pages.

Meoño-Segura, J. 2003. *Hacia una Estrategia Ambiental Integral, Unitaria y Viable*. San José: Instituto de Investigaciones en Ciencias Económicas, Universidad de Costa Rica. 119 pages.

MINAE-PNUMA 2002. *GEO Costa Rica: una perspectiva sobre el medio ambiente*. Observatorio del Desarrollo, 162 pages.

MINAE-SINAC 2006. Sistema de Evaluación y Mejoramiento. MINAE, 94 pages.

Miranda, M., I. T. Porras, and M. L. Moreno. 2003. *The Social Impacts of Payments for Environmental Services in Costa Rica. A Quantitative Field Survey and Analysis of the Virilla Watershed*. London: International Institute for Environment and Development, 50 pages.

———. 2004. *The Social Impacts of Carbon Markets in Costa Rica. A Case Study of the Huetar Norte Region*. London: International Institute for Environment and Development, 39 pages.

MIVAH. 2006. *GEO Gran Área Metropolitana del Valle Central de Costa Rica: Perspectivas del Medio Ambiente Urbano*. Ministerio de Vivienda y Asentamientos Humanos, 268 pages.

Murillo, C. and R. Arias 2005. *Estudio de la Oferta y Demanda de Bienes y Servicios Basados en Recursos Bilógicos Nacionales*. CINPE, 157 pages.

PROCOMER 2007. *Costa Rica Estadísticas de Exportación 2006: Módulo 3 Exportaciones según principales productos*. PROCOMER, 56 pages.

Rojas, M., and B. Aylward 2003. *What are we Learning from Experiences with Markets for Environmental Services in Costa Rica? A Review and Critique of the Literature*. London: International Institute for Environment and Development, 102 pages.

SINAC, 2005, *El Sistema Nacional de Áreas de Conservación: Evolución y Perspectivas*, SINAC, 58 pages.

The Nature Conservancy 2006. *Resumen de la encuesta: Opinión de los Costarricenses acerca del Tema Ambiental: Valoración de la Gestión Actual y Perspectivas para el Próximo Gobierno*. TNC, 2 pages.

Tribunal Supremo de Elecciones 2006. *Elecciones 5 de Febrero 2006: Escrutinio definitivo para la Elección de Presidente y Vicepresidentes*. TSE, 1 page. Available from http://www.tse.go.cr/escrutinio_f2006/Presidenciales/0.htm

Tribunal Supremo de Elecctiones 2007. *Resultados del Escrutinio Referéndum 2007 a Nivel Nacional*. TSE, 1 page Available from http://www.tse.go.cr/ref/ref_def/pais.htm

UCACEP 2005. *Nota Técnica No. 8: Canon por Vertidos y Canon por Aprovechamiento de Aguas*. UCACEP, 4 pages.

Zeledón, J.M. 2006, *Canon de Aprovechamiento de Agua*, MINAE, 6 pages.

ARCHIVAL SOURCES

Executive Decrees/ Court Files/ Official Communications and Agreements

Casas, K. and F. Sánchez. *Algunas acciones urgentes para activar la campaña del Sí al TLC*. Memorandum to the President and the Minister of the Presidency. July 29th 2007, 6 pages.

Constitutional Court File 02-001922-0007-CO, 6 December 2007

Executive Decree # 25439-MP-TUR, 27 August 1996

Executive Decree # 30175-MP-TUR, 13 February 2002

Executive Decree #31176-MINAE, 23 June 2003

Executive Decree #31858-MINAE, 23 June 2004

Executive Decree #32868-MINAE, 24 August 2005

Executive Decree #33582-MINAE, 17 July 2007

Executive decree # 33583-MINAE, 17 July 2007

Manual de Procedimientos para el Pago de Servicios Ambientales, La Gaceta #51, pp. 1-15. (Guidelines for the Payment of Environmental Services)

INBio-MIRENEM 1994. Convenio de Cooperación entre el Ministerio de Recursos Natural, Energía y Minas y la Asociación Instituto Nacional de Biodiversidad. (Agreement for Cooperation between the Ministry of Natural Resources Energy and Mines and the INBio Association)

PTGP Polo Turístico Golfo de Papagayo ICT 2008. *Normas Técnicas y Directrices Generales*.

Laws and Regulations

Constitución Política de la República (Costa Rican Constitution)

Ley de Aguas No. 276

Ley de Creación del Instituto Costarricense de Turismo No. 1917 (Law for the Creation of theCosta Rican Tourist Board)

Ley De Industria Turística No. 2706 (Tourist Industry Law)

Ley de Planificación Urbana No. 4240 (Urban Planning Law)

Ley sobre la Zona Marítima Terrestre y su Reglamento No. 6043 (Law of the Maritime-Terrestrial Zone and its Regulation) (LZMT)

Ley de Creación del Servicio de Parques Nacionales No. 6084 (National Parks Law) (LPN)

Ley No. 6370 (Declared the Tourist Pole of Papagayo of public interest and utility)

Ley de Creación del Proyecto Turístico de Papagayo No. 6758 (Law for the Creation of the Papagayo Tourist Project)

Ley de Incentivos para el Desarrollo Turístico No. 6990 (Law of Incentives for Tourist Development)

Ley del Impuesto sobre la Renta No. 7092 (Income Tax Collection Law)

Ley de Conservación de Vida Silvestre No. 7317 (Wildlife Conservation Law)

Ley Orgánica del Ambiente No.7554 (Organic Law of the Environment) (LOA)

Ley Forestal No. 7575 (Forestry Law)

Ley de Biodiversidad No. 7788 (Biodiversity Law) (LB)

Ley Para el Desarrollo, Promoción y Fomento de la Actividad Agropecuaria Orgánica No. 8591 (Law for the Advancement, Promotion and Development of Organic Agriculture)

Plan Nacional de Desarrollo 2006-2010 (National Development Plan 2006-2010)

Reglamento para el Control Nacional de Fraccionamientos y Urbanizaciones (Regulation for the Control of Urbanizations) (RCFU)

Bills

No. 14.585 – Texto Sustitutivo, Ley del Recurso Hídrico (Hydrologic Resource Law).

No. 16.047 – Tratado de Libre Comercio República Dominicana-Centroamérica-Estados Unidos (United States, Dominican Republic, Central American Free Trade Agreement) (CAFTA)

No. 16.123 – Tratado de Budapest sobre el reconocimiento del Depósito de Microorganismos a los fines del Procedimiento en Materia de Patentes (Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure)

No. 16.279 – Acuerdo de Cooperación Ambiental entre República Dominicana, Centroamérica y los Estados Unidos de América (Agreement on Environmental Cooperation between Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua and the United States of America) (ACA RD – CA- E.E.U.U.)

No. 16.302 – Proyecto de Ley de Reforma a Varios Artículos de la Ley n.º 6043, ley sobre la zona marítimo terrestre (Reform to Law No. 6043).

No. 16.327 – Ley de protección a las obtenciones vegetales UPOV 91 (International Convention for the Protection of New Varieties of Plants, UPOV 91).

No. 16.349 – Creación del Refugio Nacional de Vida Silvestre Iguanita, para Fortalecer la Protección de los Ecosistemas Terrestres y Marinos de la Zona, y el Mantenimiento de la Tradición de uso Popular de la Playa Iguanita (Creation of the Iguanita Wildlife Refuge).

Congress Proceedings

Comisión Permanente Especial de Ambiente – Especial Permanent Commission on the Environment

Ordinary Session No. 24, 25 January 2007

Ordinary Session No. 25, 01 February 2007

Ordinary Session No. 26, 08 February 2007

VIII. APPENDIX

A. Field Trips

2007

January 13: Colinas del Poás

January 19-21: San Gerardo de Dota

January 26-27: Monteverde

May 9 and August 19: INBio Parque

May 21: Museo Nacional

May 23: Parque Nacional Volcán Poás

May 25-27: La Fortuna, Parque Nacional Volcán Arenal, Cataratas Río Fortuna

June 15-17: San Gerardo de Dota

June 13: MINAE

July 13 -17: Parque Nacional Santa Rosa, Bahía Junquillal, Playa Panamá

September 13: El Zota, Organic Agriculture, Subsistence Farming, Agritourism

September 14: Dole Banana Plantation, Puerto Viejo Sarapiquí

September 20: Carara Nacional Park

September 21: Tárcoles River/ Guacalillo Wetland/ Tárcoles Estuary, Playa Azul

September 26-27: APROSAMA , APRODUMA, Ganadera Rio Fortuna

October 04: Los Chorros Protected Area

October 12: Monteverde Cloud Forest Preserve, CCT, Monteverde Biological Station

October 13: Children's Eternal Forest, Monteverde Conservation League

October 18: Cerro Atenas Protected Zone, Atenas, Costa Rica

October 19: Parque Nacional Volcán Poás
October 24: ADIFORT, La Fortuna Waterfalls

October 24: Arenal Dam, hydropower generation, irrigation projects.

October 25: Ganadera Río Fortuna, Melina, Roble Coral and Cenízaro Plantations under PES

October 25: Santa Teresa de Cutris, Dole pineapple plantations, APRODUMA's Butterfly Farm

November 07 - November 12: Visit to Nicaragua – Parque Nacional Volcan Masaya, Reserva Natural Mombacho, Zona Protectora Volcán Maderas, La Chureca Landfill in Managua.

November 18-23: Santa Teresa de Cutris; San Marcos de Cutris – Butterfly farm, agritourism.

November 24: Hotel Marriot Los Sueños

November 27: Costa Rican Entomological Supplies/The Butterfly Farm, La Guácima Alajuela.

December 30- Jan 02: Playa Bandera, Parrita, Puntarenas

2008

Janaury 03: Parque Nacional Volcán Poás, The Real Coffee Tour – Doka Farm

January 14-16: La Selva Biological Station

January 31- February 2: Bahía Culebra, Golfo de Papagayo, Playa Hermosa, Playa Panamá.

March 01: Nectandra Botanical Gardens; Santa Teresa de Cutris

March 07-09: Parque Nacional Rincón de la Vieja; Las Bromelias ecological and tourism project.

B. Lectures and Forums

Monge-Nágera, Julián (UNED) *¿Cómo llegó Costa Rica a ser un líder mundial en ecoturismo?* UCR Auditorio Escuela de Biología, Campus Rodrigo Facio, 30 May 2007 , 2pm.

Lobo-Segura, Jorge (UCR), *Importancia de las Áreas Protegidas del Pacífico Sur de Costa Rica*, UCR Auditorio Escuela de Arquitectura, Campus Rodrigo Facio, 31 May 2007, 6 pm

Pacheco, Freddy (UNA), Rene Castro-Salazar (Minister of Environmet and Energy 1994-1998), Alfonso Mata-Jiménez (UCR, CCT), Rolando Mendoza (UCR/Setena), *Humanismo y Medio Ambiente*, Auditorio Abelardo Bonilla, UCR, 5 June 2007, 10am.

Rodríguez, Carlos M. (Minister of Environmet and Energy 2002-2006) and Harald Fuhr, *Políticas Ambientales de Frente al Cambio Climático*, Auditorio Facultad de Ciencias Sociales, Campus Rodrigo Facio, 12 July 2007 , 5pm.

Castellano Bohórquez, Hercilio, *La planificación del desarrollo sostenible: contenidos, entorno y método*, Sala 1 de la Facultad de Ciencias Sociales, Campus Omar Dengo, 6 August 2007, 3pm.

Wilson, Edward O., (Harvard University Natural History Museum), *Biodiversity and the three dimensions of the future of Biology*, Auditiorio Ciudad de Investigación, Universidad de Costa Rica, 22 August 2007, 2pm.

Ugalde, Alvaro (Conservation Pioneer and Activist), Jorge Lobo-Segura (UCR), Edward O. Wilson (Harvard University), Rodrigo Gámez (Director and Founder of INBio), Pedro León Azofeifa (UCR/Peace with Nature Initiative), *El futuro de la Biodiversidad en Costa Rica,* Auditorio Escuela de Educación, Universidad de Costa Rica, 23 August 2007, 4pm.

Iglesias, Luis (Ecologica), *Sustainable Agriculture and Certification Programs*, Center for Sustainable Development Studies, Atenas, Costa Rica, 02 October 2007, 1pm.

Pounds, Allan (CCT), *Global Warming and Species Extinction*, Monteverde Biological Station, 12 October 2007, 7pm.

Alpízar, Felipe, *The GEF's Small Donations Program*, Center for Sustainable Development Studies, 28 November 2007, 4pm.

C. Formal Interviews and Cited Personal Communications

Luis Matarrita, ASVO Director, June 20 2007, 13:30 pm.

Mauricio Alpízar, Staff at Parque Nacional Volcán Poás, September 4 2007

Mauricio Fernandez, Biologist, January 15 2008

D. Other Sources of Information

Radio Programs

Pacheco, F. 2007b. *La agenda Nacional Ambiental*. Radio Interview by Irma Sandoval and Olga Sánchez. [cited March 27 2007] Available at http://www.radiouniversidad.ucr.ac.cr/transmision.php?file=http://www.radiouniversidad.ucr.ac.cr/podcast/desayunos/marzo/Lunes_19_Marzo_2007_Media.mp3&title=Desayuno%20Lunes%2019%20de%20Marzo%202007

Webpages (all lastly visited on March 5th 2008)

CCT – http://www.cct.or.cr/

CST – http://www.turismo-sostenible.co.cr/EN/home.shtml

El Morro – http://www.elmorro.co.cr/

El Morro. 2008a. *Promotional Brochure*. Available from http://www.elmorro.co.cr/El%20Morro%201.pdf

El Morro. 2008b. *PromotionalBrochure*. Available from http://www.elmorro.co.cr/El%20Morro%202.pdf

Ecodesarrollo Papagayo – http://www.peninsulapapagayo.com/
and – http://www.peninsulapapagayo.com/The_Desitnation/Destination.aspx

FONAFIFO – http://www.fonafifo.com/

ICT – Costa Rican Tourism Board - http://www.visitcostarica.com/ict/paginas/ict.asp

ICT/ Polo de Desarrollo Turístico Golfo de Papagayo – http://www.visitcostarica.com/ict/paginas/ictnotaict.asp?idnota=341

INBio – http://www.inbio.ac.cr

INBio Parque – http://www.inbio.ac.cr/inbioparque/es/index.html

La Selva – http://www.ots.ac.cr/en/laselva/

La Paz Waterfalls – http://www.waterfallgardens.com/

Osa Campaign – http://www.osacampaign.org

OTS – http://www.ots.ac.cr/

Reserva Biológica Bosque Nuboso Monteverde – http://www.cct.or.cr/reserva_monteverde/reserva_monteverde.php

Pequeñas Donaciones (Small Grants Program) – http://www.pequenasdonacionescr.org